

A National Survey of Conservation Reserve Program (CRP) Participants on Environmental Effects, Wildlife Issues, and Vegetation Management on Program Lands

Biological Science Report
USGS/BRD/BSR-2003-0001

U.S. Department of the Interior
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Preface

Technology and specialization propelled the United States to the forefront of the worlds' leading agricultural producers. The principal components of modern agriculture, energy, machinery, agrochemicals, and irrigation, all potentially influence farm and off-farm environmental quality. Consequently, agricultural effects on abundance, distribution, and diversity of wildlife continue to be profound, reaching from individual fields across rural landscapes into freshwater and marine ecosystems.

The 20th century saw American agricultural yields increase as a consequence of farming existing cropland more intensively and bringing, new, less fertile lands into production. By the 1980's, the agricultural community was in a crisis due to growing operational expenses, elevated interest rates, waning land values, overproduction, and diminished foreign demand for products. The economic situation in the agricultural sector and heightened public concern about environmental quality brought forth establishment of the Conservation Reserve Program (CRP) in Title XII of the Food Security Act of 1985. The voluntary, long-term cropland retirement program is not the first effort by the U.S. Department of Agriculture (USDA) to remove environmentally sensitive land from production. The CRP has become the principal USDA conservation program with a current enrollment of over 13.7 million ha (34 million acres). Substantial environmental and social benefits led to persistent support from agricultural and conservation communities for continuation of the CRP in 1990 and 1996 agricultural legislation. The CRP was again reauthorized and expanded in the 2002 Farm Security and Rural Investment Act, promising environmental benefits well into the 21st century.

Financial support to the agricultural community, reduction of surplus commodities, reducing erosion of soil, and protection of long run soil productivity were principal goals of the CRP. As a consequence of CRP implementation, however, benefits to wildlife in agricultural ecosystems were apparent and pervasive. Continued evolution of the CRP has elevated wildlife related objectives in program implementation. Recognition that periodic management of CRP vegetation may be needed to maximize long-term benefits to wildlife points to changes in how the program may be administered. Conservation priorities associated with agricultural ecosystems differ across geographic regions. Consequently, future management of CRP and other agricultural lands that address environmental issues will be most effective if local goals, priorities, and constraints faced by landowners are effectively incorporated into program administration. In terms of costs and areas enrolled, the CRP is the largest conservation program in the United States. How the program is managed has social and environmental quality implications extending far beyond fields enrolled in the program. Not all effects of the CRP on program participants are obvious, nor have they all been positive. This report is based on a national survey of 1,412 CRP participants describing personal, family, and environmental effects as seen from the perspective of those most affected. Strengths and weaknesses of the CRP are described. This information is furnished in the hope that it will assist USDA in continued refinement of agricultural conservation programs.

Executive Summary

The Conservation Reserve Program (CRP) remains the largest environmental program administered by the U.S. Department of Agriculture (USDA). Enrollment currently exceeds 34 million acres with CRP lands in all 50 states and Puerto Rico. The CRP continues to be acknowledged for its' actual and potential environmental benefits. Because the agricultural community and American public value environmental quality and conservation programs have long-term effects on the social fabric of rural communities, improvement in program performance is an important goal of USDA conservation policies. Recognition of the opinions and constraints faced by participants is essential for refinement in administration and management of lands enrolled in conservation programs.

In response to a request by the Farm Service Agency (FSA), the U.S. Geological Survey (USGS), completed a national survey of over 2,000 persons holding existing CRP contracts in 2001. The purpose of the survey was to describe participant opinions about personal affects of the CRP, wildlife issues, and USDA administration of the program. Principal findings included:

Characteristics of Conservation Reserve Program Participants and Contracts

- CRP participants retired from active farming, 52%,
- CRP participants remaining active in farming, 43%,
- national average area enrolled in CRP by survey respondents, 156 acres,
- dominant CRP covers: native grasses 55%, introduced grasses 31%, trees 14%,
- almost 85% of CRP covers were successfully established at first planting,
- authorized emergency haying of CRP reported by 10.5% of respondents, and
- authorized emergency grazing of CRP reported by 5.2% of respondents.

Environmental Benefits of the Conservation Reserve Program

- improved control of soil erosion reported by 85% of respondents,
- over 75% of respondents believe CRP benefits to wildlife are important,
- positive changes in wildlife populations reported by 73% of respondents,
- improvements in water quality seen by 39% of respondents, and
- improved scenic quality landscapes observed by 37% of respondents.

U.S. Department of Agriculture Administration of the Conservation Reserve Program

- over 73% of respondents believe USDA furnished proper consideration of wildlife in CRP management,
- over 82% of respondents experienced suitable assistance by USDA related to wildlife issues,
- increased management of CRP, with increase in financial aid, was acceptable to 32% of respondents, and
- more assistance related to wildlife management is desired by 16% of respondents.

Social Benefits of the Conservation Reserve Program

- increased opportunities to observe wildlife reported by 59% of respondents,
- potential increase in future income due to CRP identified by 16% of respondents, and
- miscellaneous benefits include: assured income to support retirement, stabilization of farm income, assistance in continued operation of farms, help in prevention of urban expansion, increased land values, improved recreational opportunities, better air quality, and
- satisfaction from doing something beneficial for the environment.

While not all effects of the program were positive, almost half (49%) of respondents desire the CRP to continue without substantial change. A concern of some survey respondents was a need for an increase in rental payments and assistance to cover management of CRP lands.

Almost 55% of survey respondents were satisfied with the amount of assistance furnished by USDA in relation to wildlife issues. Survey results imply that delivery of technical assistance and up-to-date information on management of conservation and agricultural lands for wildlife needs greater emphasis by USDA and cooperating agencies.

A National Survey of Conservation Reserve Program (CRP) Participants on Environmental Effects, Wildlife Issues, and Vegetation Management on Program Lands¹

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Abstract: A national survey of Conservation Reserve Program (CRP) contractees was completed to obtain information about environmental and social effects of the program on participants, farms, and communities. Of interest were observations concerning wildlife, attitudes about long-term management of program lands, and effectiveness of U.S. Department of Agriculture (USDA) assistance in relation to these issues. Surveys were delivered to 2,189 CRP participants with a resultant response rate of 64.5%. Retired farmers represented the largest category of respondents (52%). Enhanced control of soil erosion was the leading benefit of the CRP reported. Over 73% of respondents observed increased numbers of wildlife associated with lands enrolled in the program. The majority of respondents reported CRP benefits, including increased quality of surface and ground waters, improved air quality, control of drifting snow, and elevated opportunities to hunt or simply observe wildlife as part of daily activities. Income stability, improved scenic quality of farms and landscapes, and potential increases in property values and future incomes also were seen as program benefits. Negative aspects, reported by a smaller number of respondents, included seeing the CRP as a source of weeds, fire hazard, and attracting unwanted requests for trespass. Over 75% of respondents believed CRP benefits to wildlife were important. A majority of respondents (82%) believed the amount of assistance furnished by USDA related to planning and maintaining wildlife habitat associated with CRP lands was appropriate. Nearly 51% of respondents would accept incorporation of periodic management of vegetation into long-term management of CRP lands to maintain quality of wildlife habitats. Provision of funds to address additional costs and changes in CRP regulations would be required to maximize long-term management of program lands. Additional, on-ground assistance related to management of CRP, and other agricultural lands, to maintain wildlife habitats was commonly identified as a need by survey respondents.

Key Words: Conservation Reserve Program, CRP, habitat management, USDA conservation policy, wildlife.

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Introduction

Societal support for the agrarian community persists but public opinion increasingly reveals concern about relations between agriculture and environmental quality (Unnevehr, 1993; Crosson, 1995; Thurman, 1995, U.S. Congress, 1995; Matson and others, 1997). Agriculture directly affects more than half of the contiguous 48 United States (Daugherty, 1997). An even larger area of the Nation and its coastal waters are influenced by agricultural production (Miranowski and others, 1991; Ribaud, 1997; CAST, 1999; Tilman and others, 2001). Consequently, the amount of attention focused toward environmental issues in agricultural legislation has increased in recent years [Taylor, 2001; U.S. Department of Agriculture (USDA), 2001]. Most USDA policies address environmental issues from a national perspective; however, to be most successful conservation provisions must be regionally focused, cost effective, and compatible with the aspirations of those enrolled in the programs (Doering, 1992; MacDonnell and Bates, 1993; Baydack and others, 1996; Claassen and others, 2001). Successful incorporation of environmental goals into agricultural legislation depends ultimately on the proficiency of those who frame conservation policies to address long-term social and environmental implications of agricultural land use.

The CRP, established under the 1985 Food Security Act, represents agricultural legislation furnishing positive environmental effects on a national scale (Osborn, 1997; Heard and others, 2000, 2001; General Accounting Office [GAO], 2002). As of February 2003 over 13.7 million ha (34 million acres) were enrolled in the CRP (Fig. 1) for a minimum contract period of 10 years (USDA, 2002). Continuation of the program under the 1996 Federal Agricultural Improvement and Reform Act and the 2002 Farm Security and Rural Investment Act permits many CRP lands existing under renewed contracts to furnish environmental benefits for 30 or more years. Although CRP objectives continue to evolve, economic support to the agricultural community and cost-effective conservation of natural resources remain fundamental goals (Feather and others, 1999; Ribaud and others, 2001). Of growing significance is recognition of the enduring effects that the CRP has on the distribution and quality of wildlife habitats.

Wildlife is an issue of importance to most owners of agricultural lands (Miller and Bromley, 1989, 1990; Kurzejeski and others, 1992; Allen and others, 1996; Conover, 1998; Lasley, 2000; Cable, 2002). A recent survey of State Conservation Committee members, however, reported over 60% of respondents believed that the continued loss of wildlife habitat on farms and ranches was an issue of moderate to major concern (GAO, 2002).

Although wildlife issues have been addressed in recent conservation policies, greater USDA attention toward management of the CRP and other agricultural lands to maintain or improve habitat quality (Roseberry and David, 1994; Hughes and others, 1995; Millenbah and others, 1996; Patterson and Best, 1996; Rodgers, 1999, 2002; Allen and others, 2001) may be acceptable to many participants of USDA programs.

Because farmers, ranchers, and private forest landowners manage two-thirds of the Nation's land, environmental and conservation goals have become key factors in formulation of USDA policies (USDA, 2001). Elevation in landowner acceptance of conservation goals can be accomplished by promoting greater understanding of environmental issues associated with agricultural production (Manfredo and others, 1998; Lichtenberg and Zimmerman, 1999; Jackson, 2002a). The beliefs of farm operators generally parallel those of the non-farming public but opinions on environmental topics may be more polarized (Lichtenberg and Zimmerman, 1999; Cable, 2002); information not specific to their geographic region may be viewed with skepticism (Newton, 2001); and extensive acceptance of conservation practices can be limited by a lack of knowledge (CAST, 1999). To be most effective, communication of conservation information should be targeted toward specific segments of the public or farm population with explicit informational needs (Duda and Young, 1998; Tucker and Napier, 2002) and in a manner that avoids scientific rhetoric (James, 2002). Communication of "why" specific management practices are advocated may be just as important as is learning "how" they can be accomplished. Ultimately, acceptance of conservation policies can be improved by incorporating the values, opinions, knowledge, and constraints of participants into program objectives and management prescriptions (Lowe and others, 1999; Laubhan and Gammonley, 2001; Raedeke and others, 2001; Natural Resources Conservation Service, 2003).

Environmental benefits of the CRP, particularly those associated with wildlife, have been relatively well documented (Dunn and others, 1993; Ryan and others, 1998; Flather and others, 1999; Heard and others, 2000; Leistritz and others, 2002). Personal communications over past years between individuals enrolled in the CRP and authors of this report, however, suggest that varied personal and social affects of the program have not been formally recognized. From a national perspective, comments such as "since establishment of the CRP streams have surface water in them" or "the CRP grasses capture drifting snow, making winter feeding of cattle easier" may appear relatively unimportant and impractical to measure. To these individuals, however, such non-quantifiable, non-market benefits are not trivial (McBeth and Foster, 1994; Williams and Diebel, 1996). An appreciation of such

understated effects can improve our understanding of environmental and social implications of long-term conservation programs delivered within agricultural ecosystems.

Our objective was to solicit and describe CRP participant judgments concerning effects of the program on their family, farm, or community. Participant attitudes toward managing CRP lands to meet conservation objectives and how effective USDA had been in communicating why specific enrollment or management criteria were required also were of interest. We believe such information may identify regional issues of concern to participants and be useful for refining the CRP and other conservation programs. In addition, participant knowledge and observations could aid USDA in identification of acceptable management alternatives, thereby elevating environmental benefits derived from conservation policies.

Methods

The USDA, Farm Service Agency (FSA) Natural Resources Analysis Group of the Economics and Policy Analysis staff furnished a Nationwide list of 2,261 names and addresses of CRP contractees as a panel for potential participants in the survey. Statistical Analysis System (SAS Institute, 1999) software was used to randomly select prospective participants from the 2000 active contract database based on the percentage of all active CRP contracts within the 10 USDA Farm Production Regions (FPRs) (Fig. 2). The survey was pre-tested by six CRP participants from four FPRs to insure questions were clearly understood and to assess respondent burden. Based on pre-test results, an average of 11.5 minutes were required to complete the survey. A staged procedure following Dillman (1978) was used to contact CRP participants selected for the survey. A postcard was initially sent to all potential respondents informing them of study objectives and that a survey would be sent to them. The respondents were given the opportunity to decline participation in the evaluation. Two weeks later a package that included the survey instrument, a postage-paid return envelope, and a letter explaining the purpose of the study was mailed to each CRP contractee. Approximately two weeks later a postcard was sent to remind participants of the previously mailed survey, asking for return of the survey, and thanking those who had already responded. Prior to publication of this document, a preliminary report of survey findings (Vandever and others, 2002) was mailed to 495 respondents desiring results of the survey.

Because information from persons intimately familiar with program effects was desired, 49 (2.2%) CRP contracts in the name of trusts, banks, or other non-personal

ownerships were rejected. Twenty-nine persons (1.3%) refused to participate in the survey or returned the questionnaire unanswered. One percent of mailed surveys were returned as undeliverable. Of 2,189 surveys delivered to CRP contractees, 1,412 (64.5%) were answered and returned (Table 1). A response rate $\geq 50\%$ is considered outstanding for a public survey, especially to a government-sponsored study where incentives cannot be furnished (Dillman, 2000). Data entry and analysis were completed using Statistical Package for Social Science (SPSS) (Norusis, 1999).

Results

Presented below is a summary of national results of the survey followed by a discussion of findings for the 10 USDA FPRs. Descriptions of responses to questions formally presented in the survey are followed by an interpretive summary of written comments furnished by survey respondents. A more complete description of written comments is provided in Appendix A. Survey questions are presented in Appendix B. Appendix C provides confidence intervals (95%) for national responses to survey questions. Respondent responses (%) in the text have been rounded to the nearest whole number.

National Results

Respondent Relations to the Conservation Reserve Program

Retired farmers were the largest category (52%) of survey respondents while 43% were owners remaining active in farming. Renters of CRP land represented 3% of respondents while 2% were trustees or non-farming owners (e.g., churches, airports, local governments) of CRP land.

Acres, Composition, and Establishment Success of Conservation Reserve Program Covers

Nationally, the number of CRP acres owned by respondents ranged from 0.3 acres to 3,825 acres with a mean of 156 acres. Over half (55%) of respondents characterized their CRP land as being planted to native grasses, followed by nonnative grasses (31%) and trees (14%). Dominant vegetation covers reported by survey respondents correspond to current, recently established, vegetative covers on CRP lands (USDA, 2003). Of the 11.4 million acres devoted to grass or tree cover establishment 10% are trees while 54% are native grasses, and 36% are nonnative grasses. (These values are, however, exclusive of 14.9 million acres of grass existing

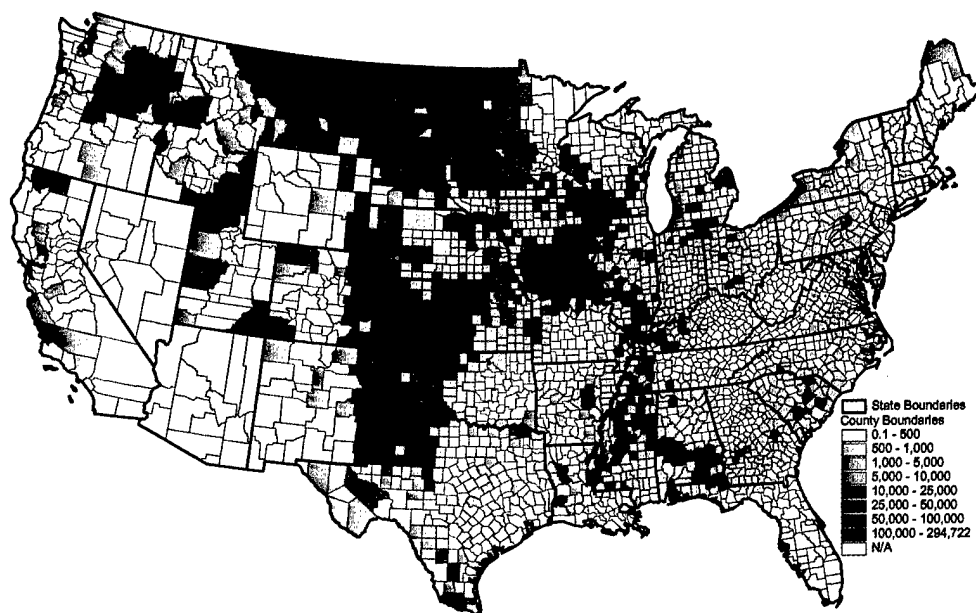


Fig. 1. Total enrollment in the Conservation Reserve Program in acres by county in February 2003. Map furnished by U.S. Department of Agriculture, Farm Service Agency, Conservation and Environmental Programs Division.

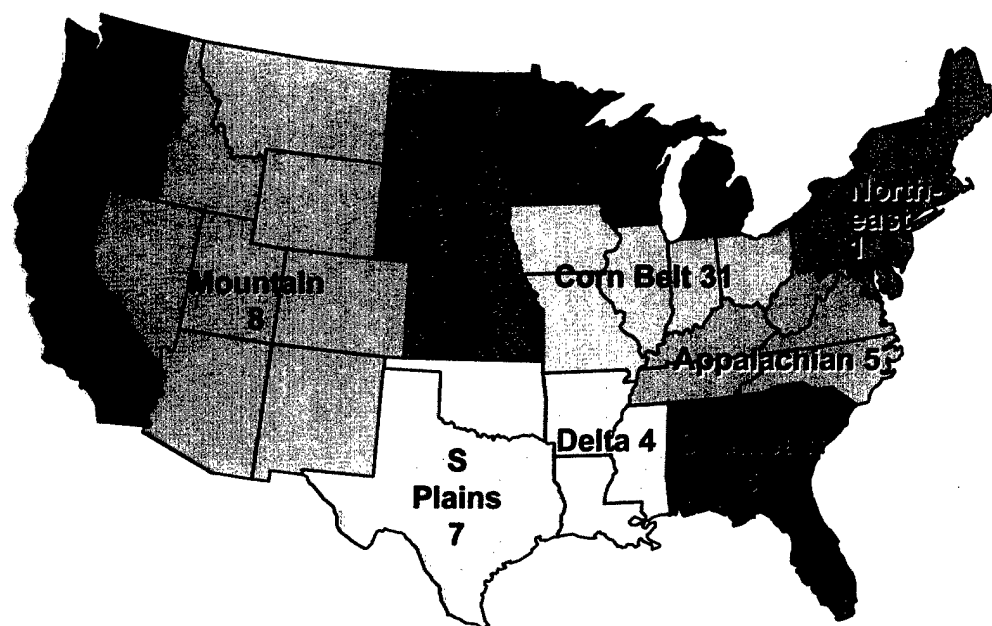


Fig. 2. U.S. Department of Agriculture Farm Production Regions and percentage of Conservation Reserve Program contracts within the Regions in 2001.

Table 1. National and U.S. Department of Agriculture Farm Production Region response rates to the Conservation Reserve Program survey.

Farm Production Region	Survey response				
	Total sent	Undeliverable	No response	Responded	Response rate (%) ^a
Pacific	105	1	41	61	58.7
Mountain	160	1	59	100	62.9
Northern Plains	412	2	145	259	63.2
Southern Plains	140	2	48	88	63.7
Lake States	299	2	75	219	73.7
Corn Belt	669	7	217	441	66.6
Delta	104	0	39	64	61.5
Southeast	114	4	44	62	56.4
Appalachian	107	4	41	59	57.3
Northeast	102	1	39	59	58.4
National	2,212	24	748	1,412	64.5

^aResponse rate = responded/(total sent-undeliverable).

under renewed contracts that include both nonnative and native grass.) Nearly 85% of respondents reported that CRP covers on their land were successfully established at the first planting. Drought was acknowledged (9%) as the primary cause of failure in initial planting of CRP covers.

Table 2 displays a national summary of disturbance and management activities occurring on CRP lands

Table 2. National summary of types of disturbance, use, or management that has taken place on lands enrolled in the Conservation Reserve Program.

Type of management or disturbance	%
Spot treatment of weeds by mowing	62.2
Spot treatment of weeds by herbicide	34.7
Additional seeding	16.4
Intentional burning	12.9
Authorized emergency haying	10.5
Establishment of firebreaks	9.6
Fertilization	6.4
Flooding	5.6
Authorized emergency grazing	5.2
Thinning of volunteer trees/shrubs	3.7
Accidental burning	3.2
Thinning of planted trees/shrubs	2.9
Accidental grazing	2.0
Use of pesticide for insect control	1.0
No known disturbance	12.1

reported by survey respondents. Nationally, 15% of respondents said they had used CRP grasslands for haying or grazing under emergency conditions. Over 63% said they had used these lands only one time under emergency use. Slightly less than 27% had used their grasslands two times and 6.8% had employed emergency haying or grazing three times. Only 3% of respondents said they had used grasslands under emergency conditions more than four times in the life of their contract. Weed control was the most frequently reported type of management applied to CRP lands. Nearly twice as many respondents (62%) reported mowing as compared to 35% who employed spot treatment using herbicides as the primary method of weed control. Slightly over 12% of respondents reported that, to their knowledge, no known disturbance had ever occurred on their CRP lands.

Environmental and Social Effects of the Conservation Reserve Program

Positive aspects. As might be expected, the greatest percentage of respondents (85%) believed the CRP contributed to diminished erosion of soil (Table 3). The effect the CRP has had on wildlife associated with agricultural landscapes is illustrated by 73% of respondents reporting increased populations of wildlife associated with lands enrolled in the program. Although 38% of respondents reported the CRP provided more opportunities to hunt and 12% found increased opportunities to lease land for hunting, nearly 60% of respondents believed the ability to simply observe wildlife was an important benefit of the program. Slightly over 29% and 39% of respondents acknowledged

Table 3. National summary of environmental and social benefits attributed to the Conservation Reserve Program by survey respondents.

Type of benefit	%
Improved control of soil erosion	85.4
Positive changes in wildlife populations	73.2
Increased opportunities to observe wildlife	59.4
Improved water quality	38.8
Increased opportunities to personally hunt	37.6
Improved scenic quality of farms or landscape	37.4
Improved control of drifting snow	30.5
Improved air quality	29.2
Increased permanence of surface water	23.7
Potential increase in future income	16.7
Increased opportunities to lease land for hunting	11.9
No positive effects	1.1

improvements in air and water quality, respectively. Improved control of drifting snow was recognized by 31% of survey respondents. Over 23% believed the CRP contributed to greater permanence of surface waters. Improvement in scenic quality of agricultural landscapes was cited as a CRP benefit by 37% of respondents. Nearly 17% saw the CRP as contributing to their future income either through future sale of timber resources, improved fertility of soils, or increased recreational value of their land.

In addition to responding to formal questions in the survey, many respondents "wrote-in" additional benefits derived from the CRP. Other positive aspects described included enhancement of soil organic matter and fertility improving potential future productivity of CRP lands, retention of water from rain and snow, and prevention of erosion on lands adjacent to CRP acres. Other environmental benefits included reappearance of springs below CRP fields, less debris in streams, and improved quality of well water. Lower use of agricultural chemicals, diminished noise from equipment and other farm operations, and helping to prevent unwanted urban expansion/development were also attributed to the CRP. Economic benefits described included helping to raise grain prices, assistance in paying taxes, assured income to support retirement, provision of additional income to support continued operation of the farm, an increase in overall farm property values, stabilization of farm income, and savings in operation costs by not having to farm corners and small fields. Many respondents stated the CRP has enabled them to take land out of production that they knew should have never been farmed. Social benefits described

were diverse and included satisfaction from doing something beneficial for the environment, having hay to give neighbors in time of need, providing a place for children and grandchildren to camp or play, provision of sites for local schools to hold conservation/ecology classes, and providing places for family/friends to hunt and socialize. By far, the majority of comments focused on increased numbers and variety of wildlife associated with CRP lands. Many respondents stated the enhanced presence of wildflowers and insects were an unforeseen, but welcome benefit of the program.

Negative aspects. Not all perceptions concerning environmental and social affects of the CRP were positive. Almost 29% of respondents viewed CRP lands as a source of weeds (Table 4). Similarly, 13% of respondents perceived the CRP as making their farm, or landscape, appear untidy or poorly managed. The CRP was viewed as a potential fire hazard by 19% of those responding to the survey. Four percent felt too much land had been taken out of production and enrolled in the CRP. Likewise, 8% of respondents believed the program had a negative effect on local economies due to lower production of crops and related impacts on local agricultural-based businesses. In relation to wildlife, 18% of respondents indicated the CRP had caused problems due to greater numbers of wildlife. Eighteen percent attributed an increase in unwelcome requests for permission to hunt to the CRP.

Respondents provided comments describing negative effects of the CRP other than those listed as options in the formal questionnaire. One of the most commonly voiced concerns was trespass and an apparent presumption by some individuals that CRP lands were open to public hunting. In some cases, the increase in habitat quality furnished by the CRP resulted in more

Table 4. Summary of the negative environmental, personal, or social effects attributed to the Conservation Reserve Program by survey respondents.

Type of negative effects	%
Source of weeds	28.8
Potential fire hazard	19.3
Attracts unwanted requests for permission to hunt	18.0
Makes farm appear unkempt or poorly managed	13.1
Attracts unwanted wildlife	8.7
Negative effects on local economy	7.8
Too much cropland taken out of production	4.1
No negative effects	25.4

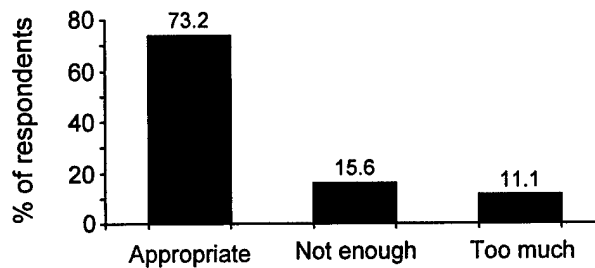
requests from strangers to have access to land for hunting. The CRP has attracted unwanted wildlife that includes an increase in insects, deer (*Odocoileus* spp.), coyotes (*Canis latrans*), predators, and other "varmints". The increased abundance of pocket gophers (*Geomys* spp.) in CRP grasslands was a concern voiced several times because, over years, the presence of gopher mounds makes fields rough and difficult to mow. Several respondents expressed concern that the CRP has had a negative effect on populations of northern bobwhite quail (*Colinus virginianus*). Elimination of row crops and establishment of tall fescue (*Festuca arundinacea*) grasslands were perceived as having the most negative effects on northern bobwhite quail populations. Some respondents expressed concern that too many acres removed from crop production had a negative effect on local economies. Several respondents believed the large number of acres enrolled in the CRP prevents young farmers from being able to start a viable farming operation and that the program could cause an unnecessary increase in farmland property values. Conversely, others expressed apprehension about too many acres of highly erosive land going back into production due to more stringent enrollment requirements in recent CRP sign-ups. As might be expected from the response to formal questions, the need for additional funds to cover costs for weed control and the potential hazard of fire presented by CRP grasslands were commonly expressed concerns.

Wildlife and Habitat Issues

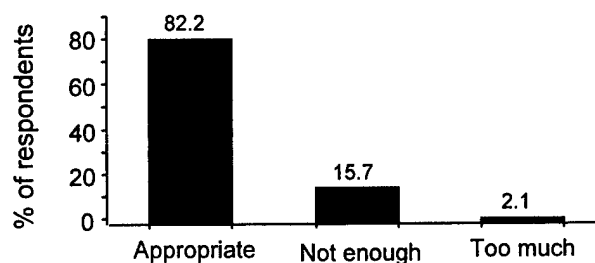
In response to attention given to wildlife in CRP enrollment requirements, 73% of respondents felt USDA furnished an appropriate level of consideration (Fig. 3a). Slightly over 15% of respondents advocated more awareness of wildlife needs by the USDA while 11% believed that wildlife had received too high a priority in CRP enrollment criteria. Figure 3b displays respondent feelings about the amount of assistance provided by USDA in relation to wildlife habitat associated with the CRP. Only 2% believed that too much aid was furnished, while 82% believed the amount of assistance provided was appropriate. Almost 16% of respondents thought not enough assistance was furnished. Almost 55% felt they had been well informed about why specific types of CRP management practices were required to maintain or improve wildlife habitat (Fig. 3c). In contrast, 38% of respondents felt they had been only partially informed and 7% alleged they had not been informed about these requirements at all.

In relation to requirements to modify existing vegetation to qualify for renewal in the CRP, over 75% of respondents agreed or strongly agreed that CRP benefits to wildlife were important (Fig. 4a). Slightly over 6% of

3a. Amount of attention given to wildlife issues in CRP enrollment.



3b. Amount of assistance received from USDA about wildlife issues.



3c. How well have you been informed about why specific conservation practices are encouraged by USDA?

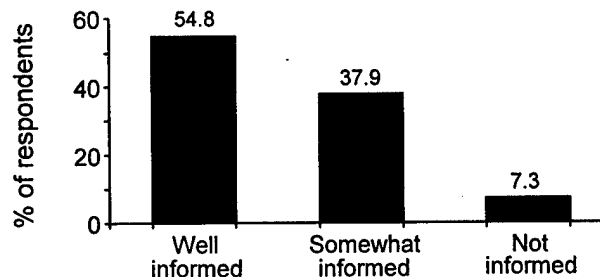
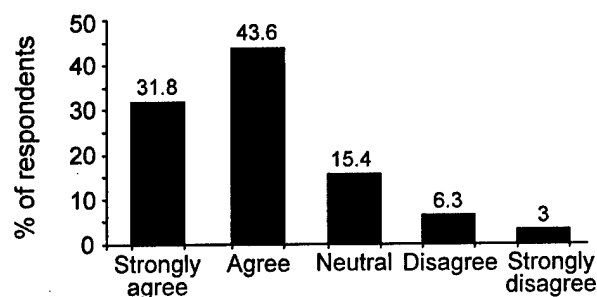


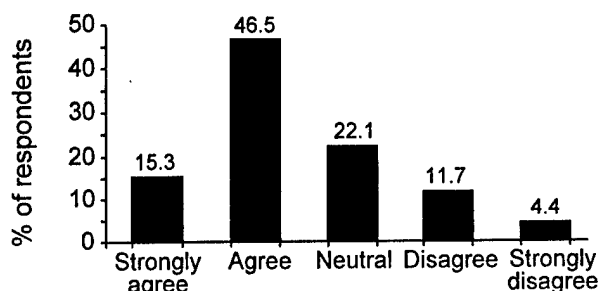
Fig. 3. National summary of survey respondent attitudes about the amount of attention given to wildlife habitat needs and the quality of information and assistance furnished by USDA in CRP requirements to manage vegetation for wildlife priorities.

respondents disagreed with the statement that CRP benefits to wildlife were important. Three percent of respondents strongly disagreed with requirements to change the composition of existing vegetation to benefit wildlife. Fifteen percent were impartial about these management requirements. Almost 62% of respondents agreed, or strongly agreed, requirements to enhance CRP vegetation composition to maintain long-term quality of wildlife habitat were reasonable (Fig. 4b). Slightly less than 12% of respondents disagreed with management requirements

4a. CRP benefits to wildlife are important.



4b. USDA requirements to maintain long-term CRP benefits to wildlife are reasonable.



4c. If well established, there should be no requirements to disturb or enhance CRP covers to remain in program.

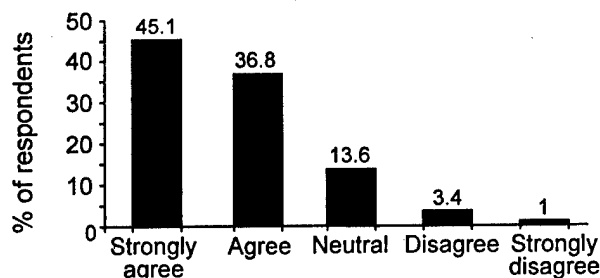


Fig. 4. National summary of survey respondent attitudes about CRP benefits to wildlife and USDA requirements to manage vegetation for wildlife priorities.

to maintain wildlife habitat quality, while 4% voiced strong opposition. Of those who answered this question, 22% expressed no opinion. In response to the question about disturbance of existing CRP vegetation cover, 82% of respondents agreed or strongly agreed that established vegetation should not be disturbed to qualify for renewal in the program (Fig 4c). Only 4% of respondents disagreed or strongly disagreed, believing it reasonable to disturb established vegetation to furnish improvements in quality of wildlife habitat. No opinion about these requirements was expressed by 14% of respondents.

Management Alternatives

In response to which methods would be most acceptable if periodic management of CRP land was

Table 5. National summary of management options most compatible with farming operations if periodic management of Conservation Reserve Program lands was needed.

Management options	%
Mowing	57.7
Shredding/brushhogging	35.4
Herbicides	25.5
Burning	24.7
Grazing	20.9
Disking/plowing	8.3

needed 58% of respondents identified mowing followed by shredding of vegetation (35%; Table 5). Application of herbicides was cited by 26% as the most desirable management alternative while use of prescribed fire or burning was selected by 25% of respondents. Grazing was identified as the preferred management alternative by 21% of respondents. Disking, or plowing, of CRP ground was the least desirable management practice being selected by only 8% of respondents.

Figure 5 displays reasons why periodic management of CRP vegetation may not be acceptable to farm operators responding to the survey. Over 14% of respondents stated they did not have equipment to implement management. Slightly over 4% of respondents declared they did not want to manage their CRP land. Thirty-four percent of respondents said they opposed disturbance of CRP grassland.

The final question of the survey asked participants to identify the most acceptable choice between four scenarios describing possible alternatives for management of CRP lands. Nationally, nearly half (49%) of respondents indicated they wanted to see no changes

Reasons given why periodic management is not desired

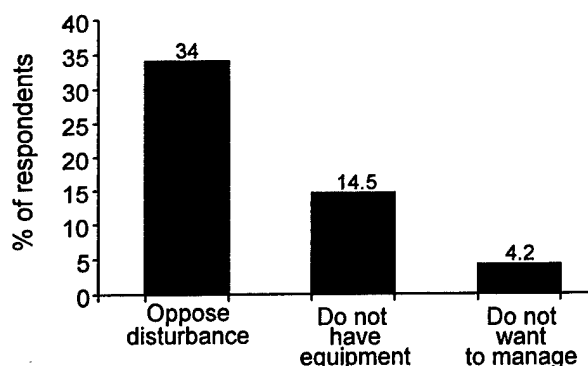


Fig. 5. National summary of reasons given why survey respondents oppose management of CRP vegetation covers.

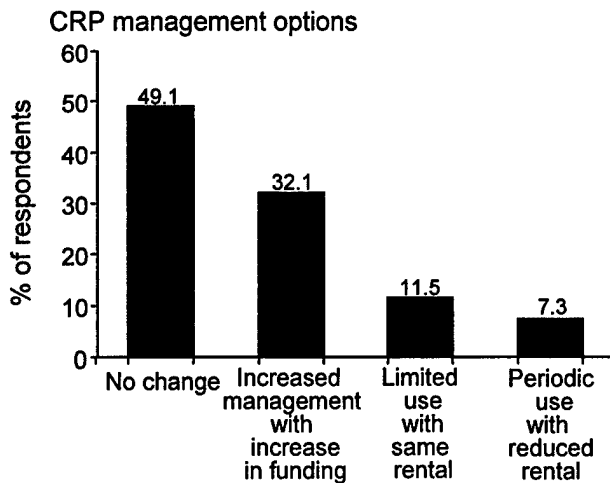


Fig. 6. National summary of survey respondent reaction to various funding scenarios for future management of CRP lands.

in enrollment or management criteria (Fig. 6). In this scenario, CRP lands could only be hayed or grazed under emergency conditions with a reduction in rental payment for acres used. The second most popular alternative (32%) offered an increase in CRP rental payments to cover management to maintain long-term quality of wildlife habitat. Restricted use following limited haying or grazing was the preferred alternative of 12% of respondents. Under this scenario CRP land could be used for limited haying or grazing without reduction in rental payments but emergency use in the used portion of the field would be prohibited for up to 2 years following managed use. Periodic haying or grazing with a 25% reduction in rental payments for acres used was the preferred alternative of only 7% of respondents.

Regional Results

Respondent Relations to the Conservation Reserve Program

Table 6 illustrates survey respondent relationships to the CRP by FPR. Owner operators actively involved in farming were highest in the Pacific (54%), Mountain (53%) and Northern Plains (51%). In all other FPRs, CRP landowners no longer actively farming represented a larger number of respondents than did those remaining active in agriculture. The highest percentage of survey respondents retired from farming were recorded in the Appalachian (67%) FPR. Renters of CRP land were highest in the Pacific FPR (8%) followed by the Northeast (5%). The highest percentage of trustees responding to the survey was in the Southern Plains (2%) and Mountain FPRs (2%). The percentage of respondents in the "other" category

(e.g., financial institutions, local governments, churches) was greatest in the Pacific (3%) and Southeast FPRs (3%).

Acres, Composition, and Establishment Success of Conservation Reserve Program Covers

Table 7 displays the average number of CRP acres held by survey respondents in each FPR. The greatest average amount of acreage enrolled in the CRP was reported by respondents in the Pacific FPR (626.3 acres) followed closely by the Mountain FPR (561.9 acres). Respondents in the Northeast FPR reported the smallest average amount of acreage enrolled in the CRP with an average of 37.3 acres. Based on information furnished by respondents, native grasses were the dominant covers established on CRP acres in the Northern Plains, Southern Plains, Lake, Corn Belt, Appalachian, and Northeastern FPRs (Table 8). Nonnative grasses were characterized as the prevailing cover planted on CRP lands in the Pacific and Mountain FPRs. Trees were the leading CRP planting in the Delta and Southeastern FPRs.

Most respondents reported CRP covers were successfully established during their first planting (Table 9). Respondents in all FPRs identified drought as the predominant cause for planting failure with the greatest percentage (16%) in the Delta region. Slightly over 5% of respondents in the Pacific FPR said insects/weeds was the cause of planting failure. Four percent of respondents in all FPRs reported planting failures due to insects/weeds, flooding, or other (e.g., poor seed quality, incorrect preparation of the seedbed) reasons.

Emergency Use

Nationally, 15% of survey respondents reported having used forage on their CRP acres at least one time during emergency conditions (Table 10). The greatest occurrence of emergency use was reported in the Mountain FPR (35% of respondents) followed by the Northern and Southern Plains FPRs (24% and 21%, respectively). Emergency use of CRP forage was least common (3%) in the Northeast FPR. The most extensive use of CRP acres, in terms of percentage of acres used, occurred in the Southern Plains and Lake FPRs where over 30% of respondents reported using $\geq 61\%$ of eligible land when use was authorized (Table 11). The least extensive use of CRP acres was reported in the Southeast and Delta FPRs where 75% and 100%, respectively, of respondents reported using $\leq 20\%$ of eligible acres.

Table 12 displays respondent answers to an inquiry about the number of times their CRP acres had been used under emergency conditions. Across all regions the

Table 6. Survey respondent relations to Conservation Reserve Program ownership by U.S. Department of Agriculture Farm Production Region. PAC = Pacific; MTN = Mountain; NP = Northern Plains; SP = Southern Plains; LAK = Lake States; CB = Corn Belt; DLT = Delta; SE = Southeast; APL = Appalachian; NE = Northeast; and NATL = National.

Relationship	Farm Production Region										
	PAC	MTN	NP	SP	LAK	CB	DLT	SE	APL	NE	NATL
Owner/operator	54.1	52.6	50.6	40.7	34.6	45.6	35.5	27.4	31.6	32.2	43.0
Owner/not active	34.4	41.2	43.2	55.8	63.1	49.0	62.9	66.1	66.7	62.7	52.0
Renter/operator	8.2	4.1	4.6	1.2	1.4	3.2	0.0	1.6	0.0	5.1	3.1
Trustee	0.0	2.1	0.8	2.3	0.5	0.5	1.6	1.6	1.8	0.0	0.9
Other	3.3	0.0	0.8	0.0	0.5	1.8	0.0	3.2	0.0	0.0	1.1

Table 7. Average number of acres enrolled in the Conservation Reserve Program by U.S. Department of Agriculture Farm Production Region.

Farm Production Region	Average # of acres
Pacific	626.3
Mountain	561.9
Northern Plains	177.8
Southern Plains	276.9
Lake States	54.4
Corn Belt	58.5
Delta	120.5
Southeast	87.9
Appalachian	67.2
Northeast	37.3
National	156.0

majority of respondents indicated they had used forage on CRP acres only one time. The most extensive emergency use occurred in the Northern Plains and Southern Plains FPRs. Over 3% of respondents in the Northern Plains indicated they had applied emergency haying or grazing five times. Nearly 2% said they had used CRP acres under emergency conditions six or more times. While nearly 7% of Southern Plains respondents used CRP acres for emergency forage four times, none said that these lands had been used more frequently than that. The least frequent emergency use of CRP occurred in the Delta and Northeast FPRs where respondents who used their lands said they had been hayed or grazed only once. Release of CRP lands for emergency use was least in these same FPRs (Table 13). Recurrent authorization of emergency use occurred in the Northern Plains, Southern Plains, and Mountain FPRs.

Table 8. Predominant covers established on Conservation Reserve Program acres by U.S. Department of Agriculture Farm Production Region. Values represent percentage of respondents reporting dominant vegetation planted.

Farm Production Region	Vegetation cover		
	Mostly native grasses	Mostly nonnative grasses	Mostly trees
Pacific	44.1	52.5	3.4
Mountain	46.9	51.0	2.1
Northern Plains	65.9	29.5	4.7
Southern Plains	54.9	45.1	0.0
Lake States	61.1	22.7	16.1
Corn Belt	56.0	37.4	6.6
Delta	31.7	0.0	68.3
Southeast	20.0	6.7	73.3
Appalachian	48.3	29.3	22.4
Northeast	71.2	13.6	15.3
National	55.1	31.3	13.6

Table 9. Summary of planting success of Conservation Reserve Program covers by U.S Department of Agriculture Farm Production Region.

Farm Production Region	Planting results				
	Successful at first planting	Failed due to drought	Failed due to insects/weeds	Failed due to flooding	Failed due to other reasons
Pacific	81.4	10.2	5.1	0.0	3.4
Mountain	80.6	15.3	2.0	0.0	2.0
Northern Plains	87.5	7.8	1.6	2.3	0.8
Southern Plains	83.8	16.2	0.0	0.0	0.0
Lake States	88.0	2.9	1.9	2.9	4.3
Corn Belt	82.5	8.4	3.4	3.6	2.1
Delta	81.3	15.6	0.0	0.0	3.1
Southeast	88.3	8.4	0.0	0.0	3.3
Appalachian	85.7	8.9	3.6	1.8	0.0
Northeast	82.5	14.0	3.5	0.0	0.0
National	84.5	9.1	2.3	2.1	2.0

Table 10. Percentage of survey respondents, by U.S. Department of Agriculture Farm Production Region, reporting emergency use of Conservation Reserve Program forage under emergency conditions.

Farm Production Region	Have you hayed or grazed under emergency conditions?	
	No	Yes
Pacific	89.8	10.2
Mountain	64.6	35.4
Northern Plains	76.2	23.8
Southern Plains	79.0	21.0
Lake States	89.8	10.2
Corn Belt	88.4	11.6
Delta	95.3	4.7
Southeast	93.4	6.6
Appalachian	87.9	12.1
Northeast	96.6	3.4
National	85.0	15.0

Table 11. Percentage of Conservation Reserve Program acres used under emergency conditions by U.S. Department of Agriculture Farm Production Region.

Farm Production Region	% of acres hayed or grazed			
	0-20	21-45	46-60	61-100
Pacific	33.3	66.7	0.0	0.0
Mountain	24.2	15.2	36.4	24.2
Northern Plains	19.3	29.8	28.1	22.8
Southern Plains	6.3	37.5	18.8	37.5
Lake States	15.8	15.8	36.8	31.6
Corn Belt	31.3	22.9	20.8	25.0
Delta	100.0	0.0	0.0	0.0
Southeast	75.0	25.0	0.0	0.0
Appalachian	42.9	14.3	14.3	28.6
Northeast	0.0	50.0	50.0	0.0
National	24.4	25.4	25.9	24.4

Management and Disturbance of the Conservation Reserve Program

Control of weeds was the predominant management disturbance across all FPRs (Table 14). Only in the Pacific and Mountain Regions did herbicides exceed mowing as a method of weed control. Additional seeding was the next most common type of management on CRP lands, again with the greatest occurrence in the Pacific and Mountain FPRs. Additional seeding occurred following

failure of initial plantings, as well as planting to augment, or change, vegetation composition in established CRP covers. From a national viewpoint, intentional burning was the next most common disturbance reported by 13% of respondents as having occurred on all, or part, of CRP acres. Intentional burning was most common in the Northern Plains, followed by Pacific, Corn Belt, and Southern Plains FPRs. Intentional burning was reported by 6% of respondents in all other regions. Accidental grazing of CRP lands was reported by 9% of survey respondents in the Pacific Region. Within all other FPRs, accidental grazing was reported by 3% of respondents.

Table 12. Given emergency use of Conservation Reserve Program lands, the number of times respondents reported use of acres by U.S. Department of Agriculture Farm Production Region.

Farm Production Region	Number of times acres have been used under emergency conditions					
	1	2	3	4	5	6+
Pacific	66.7	33.3	0.0	0.0	0.0	0.0
Mountain	62.5	31.3	6.3	0.0	0.0	0.0
Northern Plains	52.6	33.3	7.0	1.8	3.5	1.8
Southern Plains	60.0	20.0	13.3	6.7	0.0	0.0
Lake States	75.0	25.0	0.0	0.0	0.0	0.0
Corn Belt	72.3	19.1	8.5	0.0	0.0	0.0
Delta	100.0	0.0	0.0	0.0	0.0	0.0
Southeast	33.3	33.3	33.3	0.0	0.0	0.0
Appalachian	71.4	28.6	0.0	0.0	0.0	0.0
Northeast	100.0	0.0	0.0	0.0	0.0	0.0
National	63.7	26.8	6.8	1.1	1.1	0.5

Table 13. Respondent estimates of the number of times their Conservation Reserve Program acres had been eligible for emergency use, by U.S. Department of Agriculture Farm Production Region

Farm Production Region	Number of times acres have been eligible for emergency use							
	0	1	2	3	4	5	6	7
Pacific	0.0	66.7	33.3	0.0	0.0	0.0	0.0	0.0
Mountain	3.3	20.0	50.0	20.0	3.3	3.3	0.0	0.0
Northern Plains	0.0	30.0	30.0	16.0	12.0	4.0	6.0	2.0
Southern Plains	0.0	30.8	15.4	23.1	23.1	0.0	7.7	0.0
Lake States	0.0	70.6	23.5	5.9	0.0	0.0	0.0	0.0
Corn Belt	0.0	44.2	32.6	20.9	2.3	0.0	0.0	0.0
Delta	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Southeast	0.0	50.0	25.0	25.0	0.0	0.0	0.0	0.0
Appalachian	0.0	60.0	20.0	0.0	20.0	0.0	0.0	0.0
Northeast	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
National	0.6	39.8	31.6	16.4	7.0	1.8	2.3	0.6

Table 14. Type of management, disturbance, or use of Conservation Reserve Program occurring on all, or part of, acres by U.S. Department of Agriculture Farm Production Region. PAC = Pacific; MTN = Mountain; NP = Northern Plains; SP = Southern Plains; LAK = Lake States; CB = Corn Belt; DLT = Delta; SE = Southeast; APL = Appalachian; NE = Northeast; and NATL = National.

Management type	Farm Production Region										
	PAC	MTN	NP	SP	LAK	CB	DLT	SE	APL	NE	NATL
Mowing of weeds	39.0	32.3	61.1	57.3	69.6	76.7	34.4	39.3	70.7	57.6	62.2
Application of herbicides	83.1	42.4	53.7	24.4	30.9	32.0	7.8	19.7	8.6	8.5	34.7
Additional seeding	32.2	22.2	12.8	19.5	10.6	21.4	7.8	8.2	8.6	11.9	16.4
Intentional burning	22.0	5.1	24.5	11.0	6.0	13.9	6.2	14.8	3.4	1.7	12.9
Emergency haying	3.4	22.2	20.2	6.1	8.8	8.6	1.6	4.9	6.9	1.7	10.5
Firebreaks	20.3	5.1	7.8	9.8	5.1	5.5	32.8	45.9	3.4	5.1	9.6
Fertilization	1.7	3.0	3.1	7.3	3.7	10.7	9.4	6.6	6.9	3.4	6.4
Flooding	0.0	1.0	7.0	1.2	5.5	8.9	4.7	1.6	1.7	3.4	5.6
Emergency grazing	8.5	21.2	5.8	12.2	1.8	3.0	0.0	3.3	5.2	0.0	5.2
Thin volunteer trees/shrubs	3.4	0.0	6.2	1.2	3.2	4.1	3.1	3.3	3.4	1.7	3.7
Accidental burning	10.2	1.0	3.5	9.8	1.4	2.7	3.1	3.3	1.7	1.7	3.2
Thin planted trees/shrubs	0.0	0.0	0.8	0.0	2.3	1.1	18.7	24.6	1.7	1.7	2.9
Accidental grazing	8.5	3.0	2.7	2.4	0.5	1.4	3.1	3.3	0.0	0.0	2.0
Application of pesticides	1.7	2.0	1.9	0.0	1.8	0.2	0.0	1.6	0.0	0.0	1.0
No known disturbance	11.9	21.2	0.4	19.5	18.9	1.8	34.4	24.6	24.1	40.7	12.1

Nationally, emergency haying and grazing was reported by 11% and 5% of respondents, respectively. With exception of the Southern Plains, haying was the most commonly used method to harvest CRP forage. Establishment of firebreaks was relatively common in the southeastern United States where 46% of respondents in Southeast and 33% in the Delta FPRs reported use of the practice. Fertilization of CRP lands was greatest in the Corn Belt FPR with 11% of respondents reporting such use. Flooding of CRP acres was relatively uncommon with 7% of respondents in the Northern Plains reporting the greatest occurrence. Respondents reporting thinning of planted tree/shrubs were greatest in the Southeast (25%) and Delta (19%) FPRs where establishment of pine plantations is the dominant CRP conservation practice. Thinning of volunteer trees/shrubs was greatest in the Northern Plains region with 6% of respondents reporting this activity. Pesticide application to CRP acres was low, with $\leq 2\%$ of respondents reporting its use across all FPRs.

Environmental, Social, Economic Effects of the Conservation Reserve Program

Conservation Reserve Program contributions to declining rates of soil erosion were recognized as the dominant environmental benefit across all FPRs (Table 15). Over 62% of all respondents attributed increasing populations of wildlife to presence of the CRP. More than 80% of Pacific FPR respondents believed the CRP had contributed to greater numbers of wildlife. More opportunities to observe wildlife was the third highest environmental benefit with an average of 59% of all respondents seeing it as a positive outcome of the program. Increased opportunities to personally hunt were perceived as a relatively important advantage of the CRP. Generally, however, respondents neither realized, nor desired to seek, opportunities to lease CRP land for hunting, which was the lowest ranked benefit of the program. The desire to lease land for hunting was lowest

Table 15. Survey respondent identified environmental and social benefits of the Conservation Reserve Program by U.S. Department of Agriculture Farm Production Region. PAC = Pacific; MTN = Mountain; NP = Northern Plains; SP = Southern Plains; LAK = Lake States; CB = Corn Belt; DLT = Delta; SE = Southeast; APL = Appalachian; NE = Northeast; and NATL = National.

Benefit	Farm Production Region										
	PAC	MTN	NP	SP	LAK	CB	DLT	SE	APL	NE	NATL
Improved control of soil erosion	93.4	87.9	84.9	90.7	76.6	89.3	79.4	85.2	88.1	74.1	85.4
Positive changes in wildlife populations	82.0	69.7	77.1	67.4	75.2	72.7	75.8	68.9	69.5	62.1	73.2
Increased opportunities to observe wildlife	62.3	50.5	55.8	45.3	72.0	58.6	67.7	57.4	61.0	60.3	59.4
Improved water quality	45.9	28.3	38.0	22.1	36.2	48.2	23.8	37.7	45.8	27.6	38.8
Increased opportunities to personally hunt	27.9	22.2	42.8	24.4	40.8	37.0	61.9	37.7	32.2	41.4	37.6
Improved scenic quality of farm or landscape	37.7	33.3	35.3	30.2	40.8	37.3	42.9	45.9	45.8	29.3	37.4
Improved control of drifting snow	41.0	56.6	51.2	33.7	34.9	22.3	0.0	0.0	11.9	8.6	30.5
Improved air quality	54.1	40.4	31.4	45.3	21.1	21.6	30.2	45.9	32.2	15.5	29.2
Increased permanence of surface water	36.1	21.2	19.8	25.6	19.7	27.3	20.6	18.0	23.7	27.6	23.7
Potential increase in future income (e.g., timber sales)	8.2	8.1	8.9	9.3	15.6	9.8	65.1	73.8	33.9	13.8	16.7
Increased opportunities to lease land for hunting	9.8	9.1	19.4	15.1	8.7	6.6	23.8	19.7	13.6	10.3	11.9
No positive effects	0.0	2.0	0.0	1.2	1.4	0.9	1.6	1.6	1.7	3.4	1.1

in the Corn Belt FPR (7% of respondents) while it was highest in the Delta FPR (24% of respondents). Improvements in water quality and permanence of surface water were believed greatest in Pacific and Corn Belt FPRs. Over 50% of survey respondents in the Mountain and Northern Plains regions cited control of drifting snow as a CRP benefit. Respondent identification of improvements in air quality were greatest in the Pacific (54%), Southeast (46%), and Southern Plains (45%) FPRs. As might be expected, due to the prevalence of tree planting a potential increase in future income was seen as a benefit by a substantial number of respondents in the Southeast (74%), Delta (65%), and Appalachian (34%) FPRs. No apparent environmental, or social, benefits of the CRP were observed by 3% of respondents in the Northeast FPR. Within all other FPRs, $\leq 2\%$ of survey respondents observed no positive effects of the CRP.

Although a greater percentage of respondents saw positive aspects of the CRP, negative facets of the program were identified across all FPRs (Table 16). Nationally, the leading detrimental aspect of the CRP was the perception

by 29% of respondents that lands enrolled in the program were a potential source of weeds. Respondents in the Mountain, Pacific, and Southern Plains regions identified CRP lands being a fire hazard as the most significant negative aspect of the program. Nationally, the third greatest unease about the CRP was that it resulted in unwanted requests for hunting access. Requests for trespass were of least concern in the Northeast FPR; but over 12% of respondents across all other regions identified it as a detrimental effect of the program. The most concern about unwanted requests for hunting access were expressed by Corn Belt (23%), Pacific (21%), and Northern Plains (21%) FPR respondents. Attraction of undesirable wildlife was generally of minor concern across all regions but more than 10% of Pacific, Southern Plains, and Corn Belt region respondents identified this as a negative aspect of the CRP. Nearly 24% of survey respondents in the Mountain FPR believed that the CRP had negative effects on local economies. Respondents in the Pacific, Mountain, Southern Plains, and Northern Plains FPRs had a higher than average negative response to this

Table 16. Survey respondent identified negative aspects of the Conservation Reserve Program by U.S. Department of Agriculture Farm Production Region. PAC = Pacific; MTN = Mountain; NP = Northern Plains; SP = Southern Plains; LAK = Lake States; CB = Corn Belt; DLT = Delta; SE = Southeast; APL = Appalachian; NE = Northeast; and NATL = National.

Negative effect	Farm Production Region										
	PAC	MTN	NP	SP	LAK	CB	DLT	SE	APL	NE	NATL
Source of weeds	34.5	23.7	29.7	22.8	32.2	33.6	14.1	13.6	26.3	21.1	28.8
Potential fire hazard	44.8	46.4	24.7	30.4	19.6	8.9	17.2	15.3	10.5	1.8	19.3
Attracts unwanted requests for permission to hunt	20.7	12.4	20.5	16.5	12.6	23.3	14.1	13.6	15.8	7.0	18.0
Makes farm appear unkempt or poorly managed	12.1	9.3	6.2	11.4	18.7	14.2	18.7	8.5	22.8	14.0	13.1
Attracts unwanted wildlife	10.3	8.2	7.7	11.4	7.9	11.0	4.7	3.4	7.0	5.3	8.7
Negative effects on local economy	20.7	23.7	11.2	16.5	3.7	3.9	4.7	1.7	3.5	3.4	7.8
Too much cropland taken out of production	3.4	8.2	3.1	5.1	3.3	3.4	7.8	5.1	3.5	5.3	4.1
No negative effects	25.9	24.7	7.7	40.5	40.7	13.3	54.7	39.0	47.4	52.6	25.4

perceived effect of the program. The opinion that too much land was enrolled in the CRP was expressed by 8% of respondents across all FPRs. The highest percentage of respondents reporting no negative effects of the CRP were recorded in the Delta (55%), Northeast (53%), and Appalachian (47%) FPRs. Respondents in the Northern Plains were most critical of the CRP with only 8% believing that the program had no negative effects.

Wildlife Priorities in Conservation Reserve Program Enrollment

The majority of survey respondents felt an appropriate level of consideration for wildlife had been reflected in CRP enrollment criteria (Table 17). Nearly 20% of respondents in the Corn Belt and Lake States FPRs believed not enough attention had been given to wildlife issues during CRP enrollment. Almost 29% of respondents in the Mountain region believed too much attention had been focused on wildlife. Nationally over 82% of respondents were satisfied with the amount of

Table 17. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, about the amount of attention given to wildlife habitat requirements in Conservation Reserve Program enrollment.

Farm Production Region	Amount of attention		
	Appropriate	Not enough	Too much
Pacific	73.8	4.9	21.3
Mountain	68.0	3.1	28.9
Northern Plains	71.9	14.1	14.1
Southern Plains	68.2	15.3	16.5
Lake States	75.6	19.8	4.6
Corn Belt	71.9	19.4	8.7
Delta	76.6	17.2	6.3
Southeast	75.4	16.4	8.2
Appalachian	76.8	12.5	10.7
Northeast	86.2	12.1	1.7
National	73.2	15.6	11.1

assistance received from USDA in relation to planning and maintenance of wildlife habitat associated with the CRP (Table 18). In concert with opinions expressed in Table 17, 6% of respondents from the Mountain region felt too much attention had been directed toward wildlife issues. Over half (55% of all respondents) believed they had been well informed by FSA and NRCS about why specific management practices were encouraged or required (Table 19). Almost 38% of respondents, from a national perspective, felt they had only been somewhat informed while 7% felt they had not been informed at all. The greatest need for improvements in communication related to wildlife issues are in the Lake States, Southeast, Northeast, and Delta FPRs, respectively, since nearly half of the respondents in these FPRs felt they had been only somewhat or not at all informed about these issues.

Importance of Wildlife Habitat and Enhancement of Conservation Reserve Program Covers

From a national perspective, 75% of respondents either agreed or strongly agreed CRP benefits to wildlife are important and requirements to seed legumes or native grasses to improve wildlife habitat are reasonable (Table 20). More than 63% of respondents across all FPRs felt CRP benefits to wildlife were important, with the strongest support coming from Lake States and Southeast regions. In contrast, 20% of respondents in the Southern Plains and 18% of respondents in the Mountain FPRs

Table 18. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, about the amount of assistance furnished by the Farm Service Agency/Natural Resources Conservation Service to maintain or improve wildlife habitat value of Conservation Reserve Program acres.

Farm Production Region	Amount of assistance		
	Appropriate	Not enough	Too much
Pacific	85.0	11.7	3.3
Mountain	81.4	12.4	6.2
Northern Plains	78.5	18.0	3.5
Southern Plains	77.6	18.8	3.5
Lake States	87.2	11.9	0.9
Corn Belt	83.5	15.3	1.1
Delta	81.3	18.7	0.0
Southeast	78.7	19.7	1.6
Appalachian	80.7	17.5	1.8
Northeast	81.0	19.0	0.0
National	82.2	15.7	2.1

Table 19. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, about how well the Farm Service Agency/Natural Resources Conservation Service informed participants about why specific types of cover practices are encouraged by the U.S. Department of Agriculture.

Farm Production Region	How well informed		
	Well informed	Somewhat informed	Not at all informed
Pacific	61.7	31.7	6.7
Mountain	59.8	38.1	2.1
Northern Plains	57.0	34.0	9.0
Southern Plains	62.8	33.7	3.5
Lake States	46.9	46.0	7.1
Corn Belt	54.3	38.2	7.5
Delta	53.2	35.5	11.3
Southeast	51.7	40.0	8.3
Appalachian	57.9	35.1	7.0
Northeast	52.5	39.0	8.5
National	54.8	37.9	7.3

disagreed or strongly disagreed that CRP benefits to wildlife were important. Over 70% of respondents from the Delta, Lake States, and Southeast regions either agreed or strongly agreed that requirements to manage vegetation to maintain long-term benefits to wildlife were reasonable (Table 21). Only 38% of respondents from the Pacific FPR, however, agreed or strongly agreed with USDA requirements to implement management to maintain habitat benefits with an almost equal proportion (36%) either disagreeing or strongly disagreeing with such requirements. Relatively large percentages of respondents in the Southern Plains (27%), Mountain (21%), and Northern Plains (19%) regions also disagreed with these requirements. Requirements to destroy or disturb well-established CRP vegetation received substantial opposition from survey respondents across all FPRs. Almost 82% of respondents agreed or strongly agreed there should be no requirements to disturb or enhance CRP vegetation if it is already well established (Table 22). Only 4% of respondents, nationally, agreed or strongly agreed that such management was reasonable to maintain habitat quality. Opposition to disturbance of well-established vegetation was strongest in the Pacific FPR with 95.1% of respondents in disagreement to these requirements. More than 80% of respondents in the Southern Plains, Mountain, Northern Plains, Lake States, Delta, and Corn Belt agreed or strongly agreed that there should be no requirements to disturb well-established covers. Across

Table 20. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, concerning the importance of Conservation Reserve Program benefits to wildlife.

Farm Production Region	Answer				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Pacific	23.0	42.6	21.3	8.2	4.9
Mountain	12.5	51.0	18.8	11.5	6.3
Northern Plains	28.9	42.2	18.0	7.8	3.1
Southern Plains	25.3	39.8	14.5	10.8	9.6
Lake States	40.0	45.6	9.3	4.2	0.9
Corn Belt	34.8	42.3	15.6	4.8	2.5
Delta	36.1	41.0	13.1	8.2	1.6
Southeast	27.1	55.9	15.3	0.0	1.7
Appalachian	42.9	26.8	21.4	7.1	1.8
Northeast	31.0	51.7	12.1	5.2	0.0
National	31.8	43.6	15.4	6.3	3.0

Table 21. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, regarding appropriateness of requirements to maintain long-term benefits of Conservation Reserve Program vegetation covers.

Farm Production Region	Answer				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Pacific	8.2	29.5	26.2	24.6	11.5
Mountain	5.3	45.3	28.4	13.7	7.4
Northern Plains	11.8	40.6	28.7	13.0	5.9
Southern Plains	12.2	40.2	20.7	14.6	12.2
Lake States	19.7	54.5	16.4	7.5	1.9
Corn Belt	17.7	47.0	20.0	12.4	2.8
Delta	18.3	60.0	13.3	6.7	1.7
Southeast	8.5	62.7	20.3	6.8	1.7
Appalachian	27.8	33.3	25.9	9.3	3.7
Northeast	17.2	50.0	24.1	6.9	1.7
National	15.3	46.5	22.1	11.7	4.4

Table 22. Survey respondent opinions, by U.S. Department of Agriculture Farm Production Region, reflecting attitudes about requirements to enhance CRP fields, by planting additional species, or replace existing well-established vegetation covers with new species to renew lands in the Conservation Reserve Program. Values correspond to responses to the question: If CRP covers are well established, there should be no requirements to disturb or enhance them to renew acres in the program.

Farm Production Region	Answer				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Pacific	60.7	34.4	3.3	1.6	0.0
Mountain	46.9	36.5	13.5	2.1	1.0
Northern Plains	50.8	32.0	12.5	3.5	1.2
Southern Plains	59.0	28.9	9.6	0.0	2.4
Lake States	39.8	42.7	13.3	3.8	0.5
Corn Belt	44.5	36.2	16.1	2.5	0.7
Delta	37.3	44.1	8.5	6.8	3.4
Southeast	29.3	44.8	19.0	5.2	1.7
Appalachian	40.0	36.4	12.7	10.9	0.0
Northeast	33.3	40.4	19.3	5.3	1.8
National	45.1	36.8	13.6	3.4	1.0

all FPRs $\leq 10\%$ of respondents agreed or strongly agreed that requirements to disturb established covers to maintain wildlife habitat was a reasonable requirement to renew lands into the CRP.

Conservation Reserve Program Management Alternatives

When offered a choice, mowing or haying of vegetation on CRP lands was the preferred management option identified by nearly 58% of all survey respondents (Table 23). Mowing was the management alternative favored in the Northeast, Corn Belt, Lake States, and Northern Plains FPRs. Shredding of vegetation was the next most preferred management method, with 35% of respondents selecting this option nationally. Application of herbicides was the predominant management tool chosen in the Pacific FPR. Use of prescribed fire was seen as a desirable management option by 41% of Pacific and 40% of Northern Plains respondents. Less than 11% of respondents in the Southeast, Appalachian, and Northeast regions perceived fire as an attractive management option. Although only identified by 21% nationally, grazing was the leading option by respondents in the Mountain, Pacific, and Southern Plains FPRs. Nationally, disking/plowing were the least desirable management options. The disking/plowing option, however, equaled or exceeded use of herbicides in the Appalachian, Southeast, and Delta FPRs.

Opposition to disturbance of existing vegetation was the leading reason given by those who indicated they did not want to manage vegetation on CRP lands (Table 24). From 10% to 23% of respondents across all regions said they did not have the equipment needed to implement vegetation management. Nationally, an average of 4% of survey respondents simply do not want to manage CRP lands. Opposition to management was greatest in the Southeast FPR (11% of respondents) and least in the Southern Plains, Corn Belt, and Pacific regions ($\leq 2\%$ of respondents).

Nationally, nearly half (49%) of respondents desire no change in CRP enrollment rules or management criteria (Table 25). In this scenario, CRP lands could only be hayed or grazed under emergency conditions with a reduction in rental payment for acres used. The least amount of opposition to changes in CRP administration of vegetation management was received from Mountain and Southeast FPR respondents. The option to implement greater levels of vegetation management with a concurrent increase in funding was most acceptable to respondents in the Southeast FPR (45%) and least desired by Mountain region respondents (24%). The option to permit limited, periodic haying/grazing of CRP lands with constraints on emergency use following managed harvesting was chosen as a desirable alternative by only 12% of respondents nationally. The greatest level of respondent acceptance of this alternative was in the Appalachian (20%), Mountain (19%), Pacific (18%), and Southern Plains

Table 23. Survey respondent identification, by U.S. Department of Agriculture Farm Production Region, of the most suitable technique if management of Conservation Reserve Program lands was required.

Farm Production Region	Method					
	Mowing/haying	Shredding	Herbicides	Burning	Grazing	Disking/plowing
Pacific	31.1	21.3	49.2	41.0	42.6	13.1
Mountain	34.0	16.5	21.6	18.6	62.9	5.2
Northern Plains	57.6	15.7	35.7	39.6	29.4	9.8
Southern Plains	31.0	38.1	25.0	15.5	38.1	8.3
Lake States	75.0	37.3	23.1	18.9	9.4	9.4
Corn Belt	68.6	42.0	26.9	25.1	9.8	6.2
Delta	33.9	57.6	15.3	18.6	10.2	15.3
Southeast	33.3	43.9	10.5	26.3	22.8	17.5
Appalachian	49.1	63.2	7.0	5.3	12.3	7.0
Northeast	76.3	49.2	5.1	8.5	8.5	0.0
National	57.7	35.4	25.5	24.7	20.9	8.3

Table 24. Reasons given by survey respondents, by U.S. Department of Agriculture Farm Production Region, for not wanting to manage Conservation Reserve Program lands.

Farm Production Region	Constraints to management		
	I oppose disturbance of CRP	I do not have equipment	I do not desire to manage field
Pacific	41.0	9.8	1.6
Mountain	34.7	18.4	5.1
Northern Plains	40.2	14.1	4.7
Southern Plains	51.2	11.9	1.2
Lake States	31.6	18.4	7.5
Corn Belt	33.6	10.5	1.6
Delta	21.7	20.0	5.0
Southeast	15.8	22.8	10.5
Appalachian	28.1	21.1	7.0
Northeast	20.3	13.6	5.1
National	34.0	14.5	4.2

(14%) FPRs. These FPRs generally correspond to those with the greatest amount of emergency use recorded. The least desirable option for management of CRP lands was periodic haying/grazing with a fixed reduction in rental payment for acres harvested. Nationally, only 7% of respondents chose this option with the greatest support coming from Mountain (17%) and Northern Plains (15%) FPRs.

Interpretive Summary of Conservation Reserve Program Survey Respondent Written Comments

In addition to answering questions formally presented in the survey, many respondents furnished written comments related to the CRP and its management. The majority of remarks were short and could be characterized as sweeping expressions of satisfaction with the CRP and a strong desire to see the program continued without substantial change. Across several regions, however, issues of obvious concern included greater financial assistance to cover management costs, distress about destruction of existing cover to meet re-enrollment requirements, a desire to implement periodic use of grasslands, and a need for more technical assistance and education related to management of wildlife habitat.

Although the survey focused on wildlife, and related management of CRP lands, respondents described a wide range of environmental and social benefits derived from the program. One participant's remark reflects thoughts expressed by many who furnished written observations:

"While the CRP is a benefit to wildlife, its most important function is to keep land idled in useable condition in this disastrous farm economy. The program serves an important national security purpose as a investment against an uncertain future."

Presented below is a synopsis of ideas for improvement of the CRP provided by survey respondents across all FPRs. The concepts and ideas are not presented in order of priority or importance. A more complete presentation of written comments, by FPR, is furnished in Appendix A.

Table 25. Survey respondent, by U.S. Department of Agriculture Farm Production Region, identification of desirable management alternatives for Conservation Reserve Program lands. PAC = Pacific; MTN = Mountain; NP = Northern Plains; SP = Southern Plains; LAK = Lake States; CB = Corn Belt; DLT = Delta; SE = Southeast; APL = Appalachian; NE = Northeast; and NATL = National.

Management option	Farm Production Region										
	PAC	MTN	NP	SP	LAK	CB	DLT	SE	APL	NE	NATL
No change	50.0	39.8	43.1	51.9	53.5	52.5	54.5	41.5	43.6	52.7	49.1
Increased management with increase in \$ to cover costs	26.7	23.5	27.7	26.6	38.1	32.9	34.5	45.3	34.5	34.5	32.1
Limited haying/grazing, no reduction in rental payment, 50% field/year. Constrained emergency use	18.3	19.4	14.2	13.9	6.9	8.8	7.3	13.2	20.0	7.3	11.5
Periodic haying/grazing reduction in rental payment	5.0	17.3	15.0	7.6	1.5	5.8	3.6	0.0	1.8	5.5	7.3

Program Administration

- Increase CRP rental rates to reflect increasing taxes and costs of living.
- Furnish additional financial assistance to cover maintenance and management costs.
- Allow longer and variable contract periods (e.g., 5, 15, 20 years).
- Have more frequent sign-up periods with longer advance notice of an upcoming sign-up.
- Liberalize enrollment criteria to permit more diverse lands (e.g., woodlands, existing grasslands, wetlands) into CRP or other conservation programs.
- Increase emphasis on planting of hardwood trees and windbreaks.
- Eliminate 25% (of county in cropland) enrollment cap.
- Permit counties that have not reached their 25% enrollment cap to transfer unused eligibility to counties where landowners have not been able to get into the program due to maximum enrollment.
- Reduce the amount of paperwork and record keeping required.
- Incorporate conservation practices on lands remaining in production (e.g., encourage establishment of grass strips, brushy fencerows between rowcrop fields to provide wildlife cover and reduce erosion).

- Establish and maintain consistent rules and regulations across counties.
- Give enrollment priority to lands already in the program where vegetation covers are well established and of high quality.

Vegetation Management

- Allow more local control in identification of viable options for management.
- Permit use of grass cut during construction of firebreaks without financial penalty.
- Encourage use of grazing over herbicides to control weeds.
- Permit more frequent, but controlled under an approved conservation plan, grazing and haying to maintain quality of grasslands.
- Provide periodic, on-site review of vegetation conditions with subsequent recommendations for long-term management of CRP lands.

Education and Technical Assistance

- Provide more frequent, ongoing technical assistance related to planting requirements, vegetation management options, and long-term maintenance of CRP covers.
- Increase education efforts related to wildlife and long-term management of wildlife habitat on program lands.

- Increase distribution of study results, including reports from other participants in the program, describing best management practices for CRP lands.
- Implement regional or local workshops related to conservation and land management.

Discussion

Education and Technical Assistance

Results of this survey demonstrate that while a majority of participants recognize personal and environmental benefits, issues related to management of vegetation are an area of potential improvement in administration of the CRP. Although nearly half (49%) of respondents to this survey desire to see the CRP continue unchanged, many are willing to implement management to maintain vegetation quality and wildlife habitat and seek specific educational material and assistance to do so. Apprehension about financial burdens, however, will limit adoption of revised conservation policies and new recommendations for management. Regardless of the purpose, a smaller number of respondents do not desire to manage CRP lands. Some CRP participants do not live in proximity to their land, while others do not have the equipment required to complete vegetation management. A comparatively small percentage of respondents (<10% nationally) do not perceive wildlife habitat as a priority. A relatively large number of CRP participants (34% nationally) oppose disturbance of vegetation already established for conservation purposes.

Because cumulative, off-site impacts can be greater than those experienced on-farm, operators may not always visualize overall effects of agriculture on environmental quality or collective, landscape level benefits of conservation practices established on individual farms. Consequently, individuals may be understandably reluctant to adopt conservation practices especially if they result in lower profits or are perceived as an infringement upon landowner rights (Gillespie and Buttel, 1989; Browne and others, 1992; Conrad, 2000; Cable, 2002; James, 2002). Effective communication of proof that adjustments in farming practices can be economically and socially profitable is essential for increasing landowner acceptance of conservation policies (CAST, 2002; Rodgers, 2002). Kurzejeski and others (1992) concluded that government and landowner participation in conservation programs would increase in response to greater availability of information. Timely, accurate advice and assistance also was identified by the Soil and Water Conservation Society (2001) as a key element in successful implementation of conservation practices. Nearly 60% of respondents to a survey of State Technical Committee members indicated the

amount of USDA technical assistance currently available was less than what was needed (GAO, 2002). The Soil and Water Conservation Society (2001) attributed a weakness in delivery of technical services as the single greatest impediment to meeting public requests for conservation and environmental quality. Improved monitoring, translation of research findings into effective, economically feasible conservation practices, and escalation of scientific and technical support were identified as being essential for improvement in performance of conservation programs.

Nationally, over 82% of respondents to this survey believed the amount of assistance furnished by USDA in relation to maintaining or improving wildlife habitat was appropriate. Slightly over 45% of respondents, however, believed they had been only somewhat, or not, informed about why USDA advocated specific management practices. These results lead us to conclude that the amount and quality of assistance was sufficient but expected benefits to wildlife and why specific management actions were desired were not always adequately communicated to program participants. Written comments by survey respondents indicated a desire for information and assistance related not only to management of lands enrolled in the CRP but agricultural landscapes in general. Although informational pamphlets were believed useful, there was an explicit desire for greater levels of on-ground, personal attention in provision of technical assistance related to conservation issues. Demonstration of reasons supporting, and perceived benefits of, changes in CRP conservation practices may serve to decrease the 49% of respondents who desired no changes in management and administration of the program. While many requests pertained to wildlife, apparently there is a need for more aid related to management of trees, integration of grazing to maintain long-term quality of grassland habitats, and conservation options that extend beyond CRP lands to entire agricultural ecosystems.

Agricultural Ecosystems

Criteria used by USDA to evaluate land eligibility for CRP enrollment and management are important to program participants. Survey respondents see more control and flexibility at state and local levels in identification of solutions to conservation issues as improving program performance. While many participants support a progressing emphasis on long-term maintenance of CRP vegetative quality, there is a need to expand conservation practices to acreages remaining in production and to lands beyond those with a cropping history. It is apparent that reasonable options for management of CRP lands are acceptable, but respondents across all FPRs expressed the need for more technical assistance related to

management of agricultural lands in general. These feelings mirror recognition that solutions to environmental issues will be found only when conservation is effectively addressed across the entire agricultural landscape (Allen, 1994; Richards and others, 1996; Hughes-Popp and others, 2000; Johnson, 2000; Fletcher and Koford, 2002; Popp and others, 2002; Weber and others, 2002).

Effective conservation policies prevent undue financial or regulatory burdens on landowners and sustain economically viable use of land (Browne and others, 1992; Ervin and Smith, 1996). The economic costs of management to address conservation can have a negative influence on land management decisions (Southern, 1984; Koford and Best, 1995). Consequently, economic incentives may be needed to maintain specific, desirable components of agricultural landscapes (Renfrew and Ribic, 2002). Fifty-three percent of respondents to a survey of Iowa farmers favored financial incentives to encourage management for wildlife on their farms (Lasley, 2000). Two-thirds of respondents agreed the government should furnish financial support to save wildlife habitat associated with farmland. Only 24% of respondents to a Kansas CRP survey, however, indicated a willingness to change some of the current vegetative cover on their CRP acres to increase the quality of wildlife habitat, even if 50% cost share were provided (Diebel and others, 1993). Prescribed management of lands enrolled in the CRP will require changes in program rules and regulations. Provision of funds to cover additional management expenses is one alternative. Integration of economic uses into land retirement programs by permitting managed haying, grazing, or other compatible use at reduced rental payment rates was suggested by the Soil and Water Conservation Society (2001). As shown in this survey, policies allowing periodic, restricted use of vegetation without financial penalties, or an increase in financial assistance to cover management costs, are acceptable options to many CRP participants. Adoption of such policies must, however, be based on the understanding that preservation of conservation benefits, long-term maintenance of vegetation quality, and wildlife habitat values remain overriding goals.

Policies favoring relatively undemanding alternatives, reduced management costs, or added incomes probably provide the greatest opportunities to maintaining viable populations of farmland wildlife. For example, in 2002 more than 25,000 ha (>63,000 acres) of grass waterways were part of the CRP (Table 26). An unknown, but presumably large, amount of grass waterways exist exclusive of the CRP. Although the exact amount is unknown, many of these waterways have been planted to smooth brome (*Bromus inermis*). Smooth brome, particularly in wet sites, can provide spring nesting cover and is probably an ideal grass for waterways because of its sod-forming growth.

Table 26. Conservation practices on active Conservation Reserve Program contracts as of January 2002. Modified from U.S. Department of Agriculture (2002:XII-1). Existing grasses and legumes are mostly grasslands established under earlier contracts comprised of both native and introduced species.

Conservation practices on active contracts	Acres	%
Existing grasses and legumes	14,962,416	44.3
Native grasses	6,242,967	18.5
Introduced grasses	4,315,178	12.8
Wildlife habitat with woody vegetation	2,280,870	6.8
Wetland restoration, farmable wetlands/uplands	1,663,069	4.9
Tree planting	1,170,779	3.5
Existing trees	1,039,664	3.1
Grass filter strips	742,698	2.2
Riparian buffers (trees)	374,284	1.1
Rare and declining habitats	371,450	1.1
Salinity reducing vegetation	267,261	0.8
Wildlife food plots	68,715	0.2
Grass waterways	63,168	0.2
Contour grass strips	55,852	0.2
Shelterbelts, living snow fences, field windbreaks	52,825	0.2
Shallow water areas for wildlife	36,642	0.1
Vegetative filter strips	31,920	0.1
Diversions/erosion control structures	1,668	<0.1
Alley cropping, alternative perennials, cross wind strips	558	<0.1
Totals	33,741,943	100.0

Because smooth brome is not a species with a tall, robust physical stature, it is less than desirable year-round cover for wildlife (Allen, 1994; Hultquist and Best, 2001). Unquantified, observations lead us to conclude that many, if not most, grass waterways are mowed. Mowing of grassed waterways is generally required following establishment to encourage rhizome development and maximum effectiveness of the conservation practice. Elimination of mowing of all, or part, of grassed waterways once they have become well established would increase their cover value for wildlife, would likely not impede their ability to slow runoff waters, and would save operators the time and expense of mowing. This may be an unacceptable option to the 13% of CRP respondents who perceive the CRP as making their farm look unkempt. However, many operators may accept this simple

alternative for increasing the potential quality of wildlife habitat on their land.

Grassland Habitats and Management

Few ecosystems have been modified as thoroughly as have North America's mid-latitude grasslands (Whitney, 1994). Disturbance (e.g., fire, grazing) is a fundamental element of grassland ecology affecting vegetation spatial patterns as well as species composition and abundance (Collins and Glenn, 1988; Anderson, 1990; Hobbs and Huenneke, 1992; Baer and others, 2002). While disturbance may be desirable from an ecological perspective, dependence on natural disturbance regimes is often impracticable in altered settings typical of CRP grasslands embedded in agriculturally dominated landscapes. Existing disturbance presently operates on modest scales largely defined by landowner objectives and USDA policies (Cochrane, 1993; Bragg and Steuter, 1996). Because the frequency and type of disturbance applied to CRP grasslands could represent a crucial issue in definition of USDA conservation policies, management prescriptions should be based on well-defined objectives taking the personal priorities and constraints faced by program participants into consideration.

Regional differences in acceptance of management alternatives may influence the design of CRP management policies. Prescribed fire, for example, can be an effective tool for habitat-related management of CRP grasslands. Results of this survey show use of prescribed fire reported by nearly 25% of respondents from the Pacific and Northern Plains FPRs. Six percent, or less, of respondents in the Mountain, Lake, Appalachian, and Northeast regions used fire as a management tool. Use of prescribed fire in these regions may be a less suitable option due to the small size of fields, concerns about air pollution, fear of damage to adjacent woodlands/farm infrastructure, cost, legal liabilities, or a lack of experience in application of fire for management purposes. Where these issues constrain application of prescribed fire grazing, haying, mowing, or disking may be more acceptable management alternatives. Conversely, in western FPRs where the average size of fields is larger and CRP fields can be miles from a contractee's residence, haying, or other forms of physical disturbance may be less acceptable alternatives because movement of equipment may be problematic. Most CRP fields in western regions lack fencing and water requiring additional expense to make grazing an acceptable option. Simply moving stock from traditional pasture to distant CRP fields may limit practicality of grazing as a management alternative. Even more fundamental, not all CRP contractees own or have access

to livestock. Any form of management may be objectionable to some CRP contractees because they perceive it as a regulatory obligation and burden in terms of time and financial costs. Contractees retired from active farming may have the greatest difficulty in acceptance of periodic management obligations for CRP grasslands due to a lack of equipment. This can often be addressed by CRP participants contracting the services of other operators to complete required management obligations.

The large amount of land enrolled in the CRP accentuates the need to define effective management strategies that address local, regional, and national grassland-related habitat priorities. More than three-fourths of CRP lands (Table 26) are dominated by grasses broadly classified as introduced or native species. Within each category are cool-season or warm-season grasses that, as their name implies, exhibit major growth in the cooler spring/fall or warmer summer periods. Grasses in all categories exist on CRP acres as single-species monocultures or a mix of species. In terms of potential quality of wildlife habitat, native grasses and stands with a greater diversity of species generally furnish better habitat than monocultures of introduced grasses. This conclusion is based largely on the ability of native grasses to yield greater habitat value than introduced species which are often less robust, shorter, or furnish minimal diversity in structural composition. The following concepts describe elementary relations between CRP grasslands and wildlife habitat:

1. Compared to annually tilled croplands, well-established grasslands, regardless of species planted, provide at least some benefits to wildlife. Relative values of grass species, however, differ by species of wildlife and geographic region. For example, smooth brome, an introduced grass, can provide suitable nesting cover for upland nesting waterfowl in the Northern Plains but has minimal cover value in more southern, drier regions. Tall fescue, a detrimental cover for terrestrial wildlife species, may contribute to lower rates of sediments moving into adjacent surface waters potentially benefiting aquatic habitats and species.
2. Vertebrate species of wildlife are not dependent on any specific grass species. Diversity of grass species and physical characteristics of the stand (height, density, amount of litter, and bare ground) often define habitat quality within a given field.
3. Grasslands are dynamic, with physical characteristics and species composition changing through time. Periodic disturbance by prescribed fire, disking, limited grazing or haying can furnish vigorous growth and habitat features required by

a large number of wildlife species. The quality of habitat and diversity of wildlife species generally are greatest in grasslands subjected to moderate levels of disturbance.

4. Grasslands comprised of a number of grass and forb species normally are of greater value to wildlife than grasslands of lower diversity.
5. The merits of a CRP field as wildlife habitat are defined by vegetation attributes within the field and spatial relations with other land uses. Ultimately, however, specific species of wildlife must be identified before the explicit habitat potential or management recommendations for any given field can be defined.

Respondents to this survey expressed a widespread desire to incorporate occasional, controlled grazing and haying into long-term management of CRP grasslands. Perhaps more than any other type of disturbance, however, effects of grazing on wildlife habitat cannot be defined without specification of which wildlife species are of management concern. The intensity, duration, and timing of grazing affect grassland vegetation structure, productivity, and species composition (Kirsch and others, 1978; Klute and Robel, 1997). Each of these variables may influence habitat conditions for a given wildlife species depending on seasonal habitat requirements. Removal of grassland cover by grazing alters vegetation height, density, as well as amounts of litter and residual vegetation. Nesting habitat quality of many species of upland-nesting waterfowl, game birds, and non-game birds declines in response to annual grazing. Limited, periodic grazing, however, has been shown to enhance habitat conditions for these same species over the long-term (Kirsch and others, 1978; Renken and Dinsmore, 1987; Kruse and Bowen, 1996).

Any CRP grassland management policy defined by USDA should be based on the premise that management prescriptions are intended to maintain long-term quality of the grassland. Wildlife needs should have coequal priority in definition of management prescriptions. Only a portion of vegetation in fields subjected to periodic grazing or haying should be harvested in any given year to maintain vegetation cover and habitat. For example, a field could be harvested over a 2-year period (50%/yr of field area). To maximize the cover value, remaining, unharvested vegetation should be left in a contiguous block of cover rather than isolated patches (Luttschwager, 1991; Horn and Koford, 2000; Allen and others, 2001). The need for periodic disturbance to maintain desired characteristics of habitat will vary regionally. Generally, CRP fields in drier sites or regions will require less frequent disturbance than fields in areas with higher precipitation. From the perspective of providing wildlife habitat, annual

grazing or haying of CRP grasslands is an insupportable management alternative.

Spot treatment of weeds by mowing (62% of respondents) and herbicides (35% of respondents) were leading types of management applied to CRP lands. Nationally, 13% of respondents said CRP made their farm appear poorly managed. Undoubtedly, this perception was based at least in part on the presence of "weeds". Under existing rules \$5.00/acre/year is furnished for management of CRP grasslands. Based on the number of respondents reporting spot treatment of weeds, the majority of these funds are apparently directed toward weed control. In most cases, as grasslands mature and perennial grasses become the dominant cover, abundance and distribution of non-grass, "weedy" vegetation typically decline (Millenbah and others, 1996; Felix and Owen, 2001; Baer and others, 2002; Foster and others, 2002). Although there may be exceptions, these studies and our observations during field studies of CRP grasslands, lead us to conclude the need to control weeds generally declines as CRP grasslands mature. To ensure beneficial management activities are completed on CRP lands, it may be desirable to modify management policies to provide >50% cost-share for completion of specific management actions (e.g., disking, burning). The \$5.00/acre/year could be furnished only during the first 5 years of a typical 10-year contract when weed control is typically of greatest need. Subsequent to that period, funds for management of grasslands would be provided only when a specific, preferred management action is completed. Program participants who widely voiced a need for increases in rental payments would dislike such a change in management policy, but the change would contribute to greater accomplishments in desired management of CRP lands later in contract years when generally most needed. Additionally, elimination of the existing blanket management fee added to the rental payment would save USDA conservation dollars by not giving it to participants who oppose management of CRP lands. These funds could then be directed to those who desire to incorporate beneficial, long-term management of conservation lands. Ideally, such a change in management policies and funds would be clearly defined upon renewal of existing and establishment of new CRP contracts.

Trees and Woodland Management

Over 13% of respondents to this survey identified trees as the dominant cover on their CRP acres. Excluding those planted in stream buffers, newly planted and existing trees account for approximately 7% of current CRP acres (Table 26). Over 68% and 73% of respondents in the Delta and Southeast FPRs', respectively, reported

trees as the prevailing cover established on lands enrolled in the CRP. Respondents in the Delta FPR, in particular, identified a need for more information related to management of CRP trees. Respondents in the Appalachian and Lake States regions voiced desire for more emphasis on planting hardwood tree species. Written comments by some respondents in the Mountain FPR identified a need for more CRP emphasis on establishment of trees and windbreaks.

Although there has been growing emphasis on hardwood and other softwood species, establishment of pine plantations [primarily loblolly pine (*Pinus taeda*)] has been the dominant forestry practice implemented over the life of the CRP. Southeastern wildlife professionals (e.g., Brennan and others, 1993; Capel and others, 1995; Burger, 2000) have expressed concern about long-term effects of pine plantations on the quality and distribution of wildlife habitat. Issues of particular concern include: lack of diversity in tree species planted, detrimental effects on landscape composition, minimal use of thinning and prescribed burning, and an increasing dependence on herbicides in site preparation. In some cases, however, CRP pine plantations have enhanced habitat diversity in intensively farmed regions of the Southeast (Moulton and others, 1991; Allen and others, 1996). Intensively managed pine plantations can furnish better habitat for wildlife by adopting alternative management strategies but many such strategies may reduce expected future timber revenue. Diversification of pine plantations and greater habitat quality for wildlife could be accomplished by:

- diversifying pine species planted,
- establishing mixed pine-hardwood plantations rather than monocultures,
- preserving remnant stands of hardwood trees within and adjacent to pine plantations,
- limiting plantation size to 100 acres, or less, and creating irregular rather than linear boundaries,
- reducing stocking levels by planting at wider spacing between individual trees and rows,
- establishing "soft borders" between plantations and adjacent agricultural lands by encouraging growth of shrubs or native grasses,
- encouraging pre-commercial thinning and commercial thinning of young age-class stands,
- encouraging longer rotations to establish sawtimber size class stands,
- advocating partial harvest of stands to encourage multi-age plantations,
- increasing input from state fish and wildlife agency and non-government organization (e.g., Quail Unlimited) personnel in design and management of plantations, and

- increasing USDA attention given to landowner priorities and landscape-level conservation and environmental issues in forestry assistance programs.

Privately owned forestlands, including plantations established under the CRP, can be expected to be an important source of Southeastern wood products. Nearly 40% of respondents in the Appalachian FPR identified a potential increase in future income as an economic benefit of the CRP. Over 65% of respondents from the Delta and Southeast FPRs' expect similar economic profits. It is likely that a large number of these individuals foresee the future sale of CRP timber as the source of economic gain. Teasley and others (1997) reported that although timber harvest is one of the major commercial uses of rural land, only 10% of landowners used any type of forestry incentive program with Cooperative Extension Service or the NRCS being the major sources of information. In large part, effects of privately owned pine plantations on the quality and distribution of wildlife habitat depend on how intensively stands are managed for timber production. Land use decisions on private forestlands are increasingly influenced by social, ethical, and environmental considerations of an ever more diverse population of owners (Hyberg and Holthausen, 1989; Sharitz and others, 1992; Bengston, 1994; Thomas, 1994). Changing demographics of southeastern landowners, in particular, imply that non-timber related financial investment and wildlife habitat are principal factors affecting management of forest resources (Allen and others, 1996). Owners of southeastern private forestlands frequently place emphasis on non-market returns from their lands, which include aesthetic and recreational values. While financial returns from woodland products remain the primary expectation from those establishing CRP pine plantations, provision of wildlife habitat appears to be an issue of near equal importance. Consequently, establishment and management of CRP plantations should be based on a balance of short- and long-term goals that increasingly reflect non-traditional desires of contractees. Most southeastern pine plantations could furnish greater diversity in habitat over a longer time if periodic management were implemented, greater provision of educational and technical assistance material were provided, and the management focus reached beyond maximum yields of timber resources.

Social and Economic Considerations

Undesirable species of wildlife, crop depredation, and unwelcome requests for permission to trespass or hunt reflect negative impacts associated with CRP-related improvements in wildlife habitat. Increases in

objectionable wildlife were identified by 42% of respondents to a survey of Kansas CRP participants (Diebel and others, 1993). As with this survey, undesirable wildlife was most often identified as deer and coyotes. Miller and Bromley (1989) concluded that some respondents did not want to improve wildlife habitat because they believed it would attract hunters to their land.

Although use of private lands for fishing, wildlife observation, camping, and hiking is growing, hunting remains the most popular recreational activity on private lands (Teasley and others, 1997). Nationally, 18% of respondents to this survey were distressed about requests from hunters for access to their CRP lands. Almost one in four respondents in the Corn Belt FPR voiced concern over this issue. Factors affecting landowner attitudes toward granting access to their property include landowner perceptions of those requesting permission to trespass, land management objectives, economic incentives, opposition to hunting, and concerns about liability or damage to property (Teasley and others, 1997; Wright and others, 2002). Based on analysis of past lawsuits associated with private land recreation, Wright and others (2002) concluded that hunting provides little exposure to liability and governmental agencies should elevate communication efforts about the legal protection to landowners afforded under state recreational-use statutes. Several states (e.g., Colorado, Kansas, Nebraska, South Dakota) have initiated successful "Walk-in" programs where lands open to hunting are well marked and landowners receive a financial incentive to permit access. More widespread use of this type of program may contribute to fewer requests for trespass.

Results of this survey demonstrating little interest by program participants in leasing CRP lands for hunting correspond to earlier surveys showing modest interest in such activity. Osborn and others (1995) reported that only 4% of the respondents to their national survey favored leasing land for hunting. A survey of CRP contractees from 16 counties in North Dakota reported <2% of respondents leased, or charged a fee for hunting, on CRP lands (Leistritz and others, 2002). Concerning overall hunter access to CRP land, 43% of North Dakota respondents indicated their land was not posted against hunting. Forty percent of respondents said their CRP land was posted, but they allowed hunter access. Only 4% of respondents to the North Dakota survey said they prohibited hunting on their CRP lands. Most respondents (89%) to the survey by Leistritz and others (2002) said the CRP had no effect on how they posted their lands.

Although negative economic aspects of the CRP on small farm communities may have been overstated

(Johnson and Maxwell, 2001; Bangsund and others, 2002) such impacts remain of concern to some enrolled in the program. Negative effects of the CRP on economies of small agricultural towns include a decline in agricultural employment, changing consumer spending as a consequence of less land farmed, lower amounts of commodities stored in local facilities, and lower demand for off-farm inputs negatively affecting local agriculturally based businesses (Mortensen and others, 1990; Luttschwager and Higgins, 1991; Johnson and others, 1994; Bangsund and others, 2002; Leistritz and others, 2002). Based on written comments, a greater percentage of respondents to this survey see the CRP providing economic support enabling retirement, and in some cases, survival of their agricultural lifestyle. Similar conclusions were drawn by Bangsund and others (2002) from their North Dakota CRP study. Although 43% of community and agricultural leaders responding to their survey believed the CRP had negative impacts on local agricultural economies and contributed to a decline in rural populations, conclusions drawn from their data argue against these judgments. Seventy-two percent of farm operators responding to the North Dakota survey indicated the CRP had reduced income risk or stabilized earnings. Respondents also attributed the CRP to helping make farming more economically and environmentally sustainable and saw recreational benefits derived from the program as a basis for growth in local economies. Due to increases in big game, waterfowl, and upland game bird populations and an associated increase in hunter activity, Leistritz and others (2002) recommend that North Dakota rural communities develop businesses that could capitalize on enhanced recreational and economic opportunities presented by the CRP.

Net social benefits of the CRP were projected between \$4.2 and \$9 billion over the life of the original 10-year program (Osborn and Konyar, 1990; Osborn, 1997). Economic benefit estimates were based on increased net farm income, future value of timber, enhancement of soil productivity, improved quality of surface waters, diminished damage by windblown dust, and greater recreational activity. Obviously, a monetary value cannot be assigned to the assorted personal benefits described by most respondents to this survey. Many respondents expressed belief that CRP financial expenditures have been far exceeded by environmental and social benefits brought by the program.

Summary

The purpose of this investigation was illumination of largely undocumented environmental and personal affects of the CRP as witnessed by program participants.

Survey results reveal the majority of respondents value environmental and social benefits derived from the CRP. For many, the CRP has enhanced the aesthetic quality of their farmland, furnished habitat resulting in greater numbers of wildlife, and increased opportunities for recreational and social use of agricultural lands. Wildlife remains an important part of the agricultural and rural way of life. For a large number of respondents, the opportunity to simply observe wildlife as a part of their daily activities is a treasured profit of the CRP. A smaller proportion of CRP participants believe that wildlife has received too much attention and the primary goal of the program should remain focused on improvements in water quality and soil erosion control. These are not contradictory goals. Conservation policies forged upon integration of landowner priorities, landscape-level planning, regionally appropriate conservation practices, effective long-term management of vegetative covers, and extension of conservation programs into lands remaining in production offer opportunities to provide multiple and enduring environmental benefits.

Overall, respondents appreciated the quality of information and effectual assistance in program enrollment and administration furnished by the USDA. More personal attention by USDA staff, periodic on-site visits, and efficient methods to communicate successful management strategies between program participants were suggested ways to improve administration of the program. Contradictory requirements to enhance vegetation species composition and weed control were seen as flaws in CRP administration. Similarly, requirements to destroy well-established grassland cover to replant new species of grass were perceived by most respondents as unreasonable. A need for information related to long-term management of vegetation and wildlife habitat associated with CRP lands remains. Based on survey results, over half of the CRP participants are retired from active farming. In many cases, these individuals do not live near their CRP lands nor do they have the equipment or ability to physically manage enrolled lands. Information dealing with alternative management scenarios and identification of local operators who can perform the required work would be useful. Survey respondents generally demonstrated a willingness to incorporate periodic management of vegetation on their CRP lands but rising taxes, costs of living, fuel expenses, and declines in CRP rental payments were cited as reasons limiting acceptance of management responsibilities. Increased financial assistance from USDA, state, or private conservation organizations to apply management focused on well-defined conservation objectives would likely receive widespread acceptance by CRP participants.

Americans tend to characterize nature as detached from human intervention (Browne and others, 1992; Nash, 1992; Whitney, 1994; Jackson, 2002b). Wilderness areas, nature preserves, and national parks characteristically are the standard by which most Americans define environmental value. Private lands, however, are where the majority of the American population lives, works, recreates, and encounters the natural world (Norton, 2000). Although major loss of habitats equivalent to those experienced in the 19th and early 20th centuries are not foreseen, remaining natural landscapes, especially those on private lands, will continue to experience use, disturbance, and fragmentation as a result of growing human population, urban expansion, and agricultural development (Langner and Flather, 1994; Knight, 1997; Tilman and others, 2001). In addition, a growing population is expected to effectively shrink the public land base directing greater pressure on private lands to furnish recreational opportunities (Geisler, 1993). Our understanding of ecological processes in highly modified, private land ecosystems remains limited (Norton, 2000). To make better decisions concerning current environmental issues on private lands and environmental issues crossing boundaries between private and public lands, there is an urgent need for monitoring, evaluation, and communication of resultant knowledge to the public and policy arenas (Lubchenco, 1998; Johnson, 2000; Czech and others, 2001). Development of ecologically viable agricultural landscapes will require contributions from social scientists and those who craft policies on both local and national scales (Weaver and others, 1996; Matson and others, 1997; Riley and others, 2002). Unfortunately, the market does not reward higher prices to farmers who are effective conservationists and rarely are elected officials recognized for considering long-run implications of the policies they advocate. Recent years have witnessed legislation yielding greater attention to social and environmental issues associated with agricultural ecosystems. How environmental issues can be addressed in policies that recognize the societal and environmental products of agricultural lands will require persistent refinement (Heimlich and others, 1998).

Current legislation is based on recognition of the importance of conservation to sustained production of commodities and environmental services associated with agricultural ecosystems. The success of USDA conservation policies in providing lasting benefits depends on continual public support for the agricultural community, recognition of landowner concerns and limitations, and an unrelenting willingness to innovatively interlace environmental and agricultural objectives in legislation and program rules. No stakeholder associated with agricultural landscapes, however, is more important

than the farmers and landowners who embrace traditional agricultural knowledge. We hope this survey will be one effective step in the refinement of policies that continue to uphold rural communities, sustain wildlife populations, and enhance environmental quality within and beyond agriculturally dominated landscapes.

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Appendix A. Regional summaries of survey respondent written comments by U.S. Department of Agriculture Farm Production Region.



Pacific: Thirty-three respondents (54%) providing additional written comments, generally expressed positive perceptions of the CRP, requested expansion, or suggested the program remain essentially unchanged. Longer contract periods were preferred as were more liberal enrollment criteria to allow additional land into the program. Greater acceptances of local management practices more properly fitting regional conditions were desired. Management procedures to maintain habitat quality and control weeds/brush including periodic grazing, limited grazing rather than herbicides in sensitive (e.g., riparian) areas, and more use of burning or disking were suggested. The provision of additional financial assistance to control weeds was wanted.

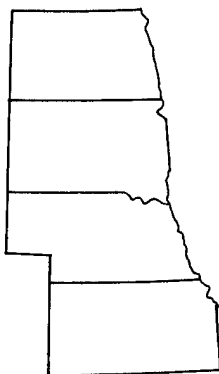
The requirement to destroy and replace existing CRP grassland cover with new plantings was a major issue of concern. There was a perception that original CRP grasslands furnished wildlife habitat of equal or greater value than grass covers that replaced them. Respondents believed reestablishment of grasses was difficult, expensive, and encouraged establishment of weeds. Many felt enhancement of vegetation species composition in CRP grasslands should be required only on newly enrolled acres or where the initial success of seeding was poor. These persons believed that well-established grasslands should not be altered solely to meet wildlife objectives. Requirements to interseed legumes (e.g., clover, alfalfa) for vegetation enhancement were perceived as ineffective where subsequent chemical control of broadleaf weeds was required.



Mountain: Over half (58%) of respondents from this region furnished additional written comments. A substantial number of comments favored incorporation of limited haying or grazing to maintain the long-term quality of CRP grasslands. However, others believed hay production on CRP grasslands could have a negative economic effect on non-CRP forage producers and suggested there should be closer monitoring and control of hay produced under emergency use. These persons also generally opposed realization of economic profit from CRP forage produced under emergency conditions. A few respondents believed whole farm enrollment in the CRP had a negative impact on local economies and should be prohibited.

A common opinion expressed was that wildlife had received too much attention in recent CRP enrollment criteria. As in the Pacific region, destruction of well-established grasslands to replant other grass species was perceived as a waste of resources. Several respondents stated the CRP was an effective conservation program but the increased emphasis on CRP wildlife habitat should come with a concurrent increase in funds to cover management expenses. Several respondents suggested rental payments should be increased to help defray rising taxes and inflation.

Positive comments pertained to beneficial effects of the CRP on ground water, increased numbers of wildlife, and control of wind erosion. A greater consistency in evaluation of lands submitted for CRP enrollment was encouraged, as was more emphasis on establishment of trees and windbreaks.



Northern Plains: Forty-four percent of surveys returned from this region held additional written comments. A large number of remarks focused on positive affects of the CRP on wildlife populations, scenic quality of landscapes, soil enrichment, decreased utilization of herbicides, and economic benefits to local economies. There were many comments suggesting CRP improvement through longer contracts, whole farm sign-ups, higher rental payments for irrigated land, and inclusion of existing grasslands into the program.

The most frequent concern expressed was a need to increase financial assistance for management of CRP grasslands. Respondents stated costs associated with management (e.g., burning, weed control) have increased but USDA payments to cover these requirements have not. Several respondents suggested an increase in CRP rental rates based on a cost-of-living index.

Appendix A. Continued.

Respondents described benefits of having CRP grasslands as a source of hay during emergencies. Many who provided written comments advocated periodic, limited haying, grazing, or burning of CRP grasslands to maintain the quality of the stands and as a means to control wildfire hazards. However, costs and risks associated with burning of CRP grasslands were of concern to others. Several respondents suggested haying might be a more appropriate management option than burning. Haying to create firebreaks should be permitted. Use of grass from firebreaks should be allowed without reduction in rental payments. Several respondents suggested management requirements and constraints should be defined at the beginning of the enrollment period and not changed prior to expiration of the original contract.

More comments pertaining to dissatisfaction with the amount and quality of USDA CRP-related assistance were received from this region than any other. Several respondents described difficulties working with USDA staff in counties other than where they lived. Because generalized USDA guidelines do not fit the needs of every farm, more local control in definition of management options was desired. On-going, relatively frequent assistance and information related to management of CRP lands was requested. There were requests for increased interaction with USDA staff for information on proper plant species, vegetation management options/techniques, and long-term maintenance of wildlife habitat. Several respondents stated they felt "forgotten" after the initial sign-up. Others suggested program entry requirements should be clearly defined and not changed in the middle of the contract period. The lack of consistency in violation enforcement of CRP management and evaluation of lands submitted for enrollment were issues of concern.



Southern Plains: Of the surveys returned from this region, 37% contained written comments. Favorable observations described benefits to wildlife, air quality, ground water, scenic quality of the landscape, and financial stability provided to CRP participants and local economies. Suggestions for program improvements included reduction in the amount of paper work and record keeping required, an emphasis on habitat improvements associated with playa lakes, periodic review of vegetation conditions on enrolled lands with recommendations for long-term management, more uniform control of weeds, and greater amounts of information on management practices. Several respondents suggested more land be enrolled in the CRP and counties that have not met their 25% enrollment cap should be able to transfer eligibility of unused acres to counties where farmers have been unable to get into the program. An increase in education focused on habitat and wildlife management was favored.

The benefits of greater control of soil erosion were described by several respondents who also believed the growing emphasis on management of CRP lands for wildlife was excessive. Requirement to enhance 51% of existing CRP grasslands by destroying existing covers and replanting to native grasses was characterized as an impractical and wasteful constraint to remain in the program contributing to increased erosion of soil and loss of existing benefits to wildlife. Other impediments to provision of wildlife habitat were identified as conflicts between required control of weeds and planting of legumes that precluded use of herbicides. Mandatory shredding/mowing of weeds was believed to inhibit growth of desired grasses and limited cover for wildlife.

Several respondents desired incorporation of periodic grazing of CRP grasslands for more natural control of weeds and invasive woody species. It was suggested limited grazing should be permitted without financial penalty if done in accordance with an approved conservation plan. An increase in rental payments was identified as a need to benefit local economies and furnish better maintenance of enrolled lands. Several respondents believed that an increase in rental payments would help keep lands in the program and prevent poor, erosive fields from returning to production.

Appendix A. Continued.



Lake States: Forty-seven percent of respondents from this region furnished written observations about the CRP. Comments were dominated by descriptions of positive affects of the CRP on wildlife and water quality. Enrollment in the CRP helped some farmers avoid sale of their land for urban development. Recommendations for program improvement included longer advance notice of sign-up periods, more flexible enrollment periods (e.g., 5, 15, 20 years), greater emphasis on hardwood tree plantings, mandatory use of firebreaks, and acceptance of more and different types of land (e.g., woodlots) into the program. It was suggested that if farmers want to enroll in the program the 25% cap per county should be eliminated. Several respondents believed wildlife should have the greatest priority in enrollment objectives followed by water quality and soil erosion.

The most common concern expressed focused on relations between inflation, increasing rates of land taxation, and the inability of existing rental payments to cover mounting requirements for management of CRP covers. Several respondents cited increases in fuel and maintenance costs and a concurrent decline in rental payments as being major concerns. Maintenance payments have not increased, making management difficult and limiting enrollment in the program. Financial incentives were believed necessary to enable landowners to implement conservation and wildlife friendly practices.

There was a desire to give enrollment priority to existing contracts where high-quality CRP vegetation already exists. Several respondents stated, that in the long run, this would save taxpayer money and maximize environmental benefits. Some respondents believed resident landowners/operators should be given priority in program enrollment over investors and absentee landowners.

There was a high level of satisfaction with USDA administration and the quality of technical assistance in the Lake States region. The majority of respondents providing comments expressed the opinion that the USDA should keep up their good work and maintain the CRP without significant changes in design or administration. In some cases, however, USDA technical assistance was described as poorly planned and information about management of CRP lands was deficient. It appeared to a few respondents that some USDA staff were not concerned if an operator was accepted into the program. Several respondents suggested greater USDA flexibility in management rules that address regional conservation issues. Several respondents wanted enhanced education and technical assistance programs focused on long-term management of CRP lands for wildlife. Program participants identified a need to be informed about study results describing best CRP management practices and associated environmental and wildlife benefits.

Requirements to destroy a portion of existing grasslands or interseed legumes to qualify for reenrollment were a concern. However, these requirements were not as opposed to as in the Southern Plains, Northern Plains, and Mountain regions. Several respondents believed limited haying or grazing needs to be implemented two or three times in a 10-year contract to maintain grassland quality and that use of prescribed fire needs greater attention.



Corn Belt: Of the surveys returned from this region, 26% contained written remarks. Overall, comments were wide-ranging and positive, focusing on CRP benefits to local economies, commodity prices, sportsmen, water quality, wildlife habitat, and air quality. Wildlife benefits were important in this region with many respondents desiring more emphasis on native vegetation, wildlife conservation, and habitat. The CRP was characterized as benefitting farmers as well as non-farmers returning dividends to future generations far in excess of taxpayer costs. Most comments could be described as "pleased with the program as is". Suggested improvements included expansion of the waterways buffer

program, routine renewal of existing contracts having established cover, more flexibility in methods to control weeds (e.g., disking, haying), greater flexibility in enrollment periods, and acceptance of more marginal, non-tilled land without a cropping history into the program. Several respondents requested that conservation practices be better applied to lands remaining in production. For example, establishment of grassed strips between rowcrop fields and allowing brushy fencerows into the CRP to prevent their removal to provide cover for wildlife.

Appendix A. Continued.

As in most other regions, CRP rental rates and expenses associated with management and maintenance of program lands engendered many comments. Most respondents favored an increase in rental payments to more closely reflect current land values and maintenance costs. While a few respondents voiced opposition to any disturbance, many would like to see periodic use of grasslands. Citing declines in wildlife use as fields aged, many respondents desired incorporation of periodic haying or grazing to maintain quality of grasslands. Periodic haying/grazing also was believed to be a way to control weeds and lower dependence on herbicides.

A few respondents resented the increased importance given to wildlife habitat in recent CRP enrollment criteria. They believed emphasis of the CRP should remain on soil conservation with wildlife assigned a lower priority. In their opinion, habitat enhancement requirements and unusual, expensive seed requirements have made staying in the CRP more troublesome and costly. Several respondents stated because they conflict with control of broadleaved weeds, requirements to interseed legumes to enhance wildlife habitat should be discontinued. Several respondents also expressed opposition to disturbance of fragile lands upon contract renewal. Destruction of existing cover and reseeding of new grasses was perceived as being expensive, exposes land to erosion, and causes an overall loss in wildlife habitat.

While respondents were generally highly satisfied with the quality USDA assistance more described concerns that local NRCS/FSA staff were over-burdened by an excessive workload. Provision of a pamphlet describing the program and management options was believed to be a poor substitute for personal attention by USDA staff. More information was desired on various types of plantings and management for wildlife. Periodic visits to farms by USDA staff for consultation and improved management assistance also was desired. Workshops and ways to get information out to new participants in farm programs were wanted prior to, during, and after enrollment. Generally, respondents wanted program options to be easier to understand, specific to local problems, and regulations be consistent across counties. Greater attention to more timely payment of cost-share funds also was an issue of concern.



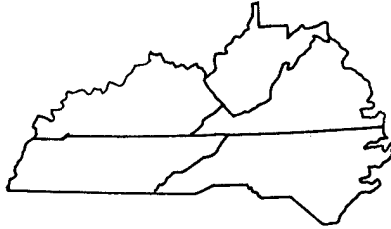
Delta: Forty-seven percent of surveys returned from the Delta FPR contained written comments, which were generally positive, citing appreciation for effective administration of the CRP by the FSA and an increased awareness of wildlife in program planning. Remarks focused on a need for more education relative to management of CRP trees, greater provision of educational seminars pertaining to management of lands, and simplification of paperwork associated with the program.

Suggestions for CRP improvement included an increase in rental payments to cover increasing taxes, more enrollment periods, and liberalized eligibility requirements to permit additional property into the program. Use of traditional crop production methods was wanted to produce wildlife food plots, as was an increased emphasis on planting hardwood tree species. Greater attention was requested for CRP management to address needs of individual farmers and local problems rather than trying to make one national program fit local situations.



Southeast: Of surveys returned from this region, 40% contained written comments. Overall, observations were positive, reflecting appreciation for environmental, financial, and wildlife benefits derived from the CRP. Several respondents wanted more varied types of lands, other than cropland, eligible for CRP enrollment. More diverse types and amount of land dedicated to wildlife food plots were desired, as was more local control in identification of acceptable conservation practices. A greater amount of cost-share funds to convert existing stands of fescue to native grasses was desired. Several respondents stated that requirements to meet wildlife and environmental issues associated with CRP lands would require adjustment of rental rates, or cost-share funds, to meet additional management demands. Increased information relative to long-term management of CRP lands was requested.

Appendix A. Concluded.



Appalachian: Nearly 46% of surveys returned from the Appalachian region held written remarks. Respondent comments reflected positive opinions about beneficial aspects of program payments, improvements in water quality, and increased abundance of wildlife associated with CRP lands. Expansion to include lands already in grass, elimination of fescue as a planting option, more frequent sign-up periods, additional lands eligible for continuous sign-up programs, and greater emphasis on planting hardwood trees were identified as potential improvements in the CRP. Greater flexibility in management options, periodic haying or grazing of CRP grasslands to maintain habitat quality, and an increase in cost-share funds to assist long-term management were recommended. A greater emphasis on education concerning how and when to manage lands for wildlife was seen as needing more attention. Comparable comments focused on the need to develop ways to communicate information from farmers/operators who have had success in management of CRP lands for wildlife and other environmental concerns to those newly enrolled in the program.



Northeast: Forty-two percent of surveys received from the Northeast FPR contained written comments. Greatest concerns expressed from this region were relations between rising costs for management of CRP lands, increased taxation, and decline in rental payments. The need for cost-share funds for establishment of legumes and obtaining help to accomplish recommended management for enrollees who do not have proper equipment were relatively frequent comments. Observations reflected overall satisfaction with USDA administration and assistance, as well as favorable response of wildlife populations to the program.

Appendix B. Conservation Reserve Program survey.

INSTRUCTIONS: Please answer each question on the following pages. Space is provided at the end of the survey for you to provide additional comments. Although you may feel that an observation may be inconsequential, your opinion and thoughts are important to the success of this survey. Your answers and comments will remain anonymous and confidential.

You can receive a summary of survey results by writing "copy of results requested" on the back of the return envelope and printing your name and address below it. In order to insure confidentiality, please do not put your name or address on the questionnaire itself.

1. Which of the following best describes your relation to the CRP? Please check the one blank that most accurately describes your relationship.

_____ owner/operator, actively involved in farming
_____ owner, but not actively involved in farming
_____ renter and operator, actively involved in farming
_____ trustee
_____ other (please describe) _____

2. Approximately how many acres do you have enrolled in the CRP? Please write a total number of acres in the blank.

_____ acres

3. How would you describe your CRP acres? Please check one blank that most accurately describes the majority of your CRP acres.

_____ mostly nonnative grasses
_____ mostly native grasses
_____ mostly trees

4. Did any vegetative covers fail or need to be reestablished when your land was first enrolled in the CRP? If so, what was the cause? Please check the blank that most accurately describes your CRP acres.

_____ CRP covers were successfully established at first planting
_____ initial plantings failed due to drought
_____ initial plantings failed due to flooding
_____ initial plantings failed due to insect or weed infestation
_____ initial plantings failed due to OTHER reasons (please describe).

5. Have you hayed or grazed your CRP lands under emergency provisions?

_____ No _____ Yes

If yes, please answer the following:

What percentage of acres were hayed or grazed? _____

How many times have these acres been hayed or grazed? _____

How many times has your land been eligible for emergency use? _____

Appendix B. Continued.

6. To the best of your knowledge, what types of management, use, or disturbance have taken place on all, or part, of your CRP acres? (Check all that apply.)

☐ spot treatment of weeds by mowing
☐ spot treatment of weeds by herbicide
☐ use of pesticides for insect control
☐ grazing, authorized under emergency use
☐ grazing, accidental
☐ haying, authorized under emergency use
☐ burning, intentional
☐ burning, accidental
☐ fertilization
☐ additional seeding
☐ establishment of firebreaks by mowing or plowing
☐ flooding
☐ thinning of pine, hardwood trees, or shrubs planted as part of CRP program
☐ thinning of volunteer pine, hardwood trees, or shrubs
☐ other (please describe) _____
☐ **NONE**, there has been no known disturbance or use of CRP acres

7. What are the benefits of the CRP on your farm or community, observed by you or your family? (Check all that apply.)

☐ improved control of soil erosion
☐ improved air quality
☐ improved water quality
☐ increased permanence of surface water
☐ improved control of drifting snow
☐ positive changes in wildlife populations
☐ increased opportunities to personally hunt
☐ increased opportunities to lease land for hunting
☐ increased opportunities to observe wildlife
☐ changes in scenic quality of farm or landscape
☐ potential future income (e.g., sale of timber)
☐ other (please describe) _____

☐ no positive effects

8. What are the negative effects of the CRP to your farm or community, observed by you or other members of your family? (Check all that apply.)

☐ too much cropland taken out of production
☐ negative effects on local economy
☐ attracts unwanted wildlife
☐ attracts unwanted requests for permission to hunt
☐ source of weeds
☐ potential fire hazard
☐ makes farm appear unkept or poorly managed
☐ other (please describe) _____
☐ no negative effects

Appendix B. Continued.

9. Please give your evaluation of the amount of attention given to wildlife habitat in CRP enrollment requirements. (Please circle the one number that best describes your opinion.)

1 -- NOT ENOUGH

2 -- APPROPRIATE

3 -- TOO MUCH

10. Was the amount of assistance you received from the Farm Service Agency/Natural Resources Conservation Service to plan, maintain or improve CRP acres for wildlife habitat (please circle the one number that best describes your opinion).

1 -- NOT ENOUGH

2 -- APPROPRIATE

3 -- TOO MUCH

11. How well have you been informed by the Farm Service/Natural Resources Conservation Service during enrollment or contract renewal about why specific types of cover practices are encouraged? (Please check the one option that best describes your opinion.)

_____ not at all informed

_____ somewhat informed

_____ well informed

12. In some situations, to have a field renewed in the CRP, the Farm Service Agency/Natural Resources Conservation Service requires that part of the field have clover/alfalfa interseeded into existing grasses or that native grasses be planted to replace existing grasses. This is most often done to increase the fields' value as wildlife habitat. Which of the following answers best describes your feelings about these requirements?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
CRP benefits to wildlife are important.	1	2	3	4	5
USDA requirements to enhance CRP covers to maintain long-term benefits to wildlife are reasonable.	1	2	3	4	5
If CRP covers are well established there should be no requirements to disturb or enhance them to renew acres in the program.	1	2	3	4	5

13. If periodic management of CRP grassland acres was encouraged to maintain desirable characteristics of vegetation, which method(s) would be most suitable to your operation? (Check all that apply.)

_____ mowing

_____ shredding/brushhog

_____ grazing

_____ burning

_____ disking/plowing

_____ herbicides

_____ other (please describe) _____

Appendix B. Concluded.

Periodic management of CRP acres is not desirable, because,

- ☐ I do not have equipment
☐ I do not desire to manage field
☐ I oppose disturbance of CRP grassland fields
☐ Other (please describe)

14. In relation to periodic management of CRP land, which of these choices are most appealing to you? (Please check the one option most acceptable to you.)

☐ No change. Maintain same enrollment and management criteria as current program. CRP acres can only be hayed or grazed under emergency conditions with a reduction in rental payment on acres used. No reduction in annual rental payment.

☐ Periodic haying or grazing with reduced per-acre annual payments. Periodic, limited haying or grazing allowed with a fixed reduction in rental payment during years of use. *Example:* A field could be hayed or grazed once every three years with a 25% reduction in rental payment on acres hayed or grazed.

☐ Limited haying or grazing with same rental payments but with restricted emergency use. *Example:* A field could be hayed or grazed once, or twice, in a typical 10-year contract period. Use would take place in year 4 to 6 of the 10-year contract. There would be no reduction in rental payment but "emergency use" of the hayed/grazed portion of the field would be restricted for a year or two following the "non emergency" use.

☐ Increased management practices with increased rental payments. Disturbance or rejuvenation required during typical 10-year contract with funds furnished to cover management expenses. *Example:* Light disking, burning, or haying of a field may be recommended once, or twice, in a typical 10-year contract period to reduce accumulation of dead plant material, improve vigor of stand, and increase vegetation productivity. Management expenses above normal rental payment would be furnished by the USDA.

15. Please use the last page of this survey to tell us how can the CRP be designed or administered in future years to better meet your needs (**OPTIONAL**).

Appendix C. Confidence intervals for national responses to the Conservation Reserve Program (CRP) survey.

Question 1: Which of the following best describes your relationship to the CRP?

	Relationship				
	Owner but not active	Owner/operator	Renter/operator	Trustee	Other
National	52.0	43.0	3.1	0.9	1.1
95% confidence interval	55.44–48.49	46.41–39.53	4.45–1.99	1.70–0.33	1.98–0.47

Question 2: Approximately how many acres do you have enrolled in the CRP? Only regional averages calculated. Confidence intervals are not presented.

Question 3: How would you describe your CRP acres?

	Description		
	Mostly native grasses	Mostly nonnative grasses	Mostly trees
National	55.1	31.3	13.6
95% confidence interval	58.28–51.81	34.38–28.35	15.90–11.43

Question 4: Did any vegetative covers fail or need to be reestablished when your land was first enrolled in the CRP? If so, what was the cause?

	Results				
	Successful at first planting	Failed due to drought	Failed due to flooding	Failed due to insects/weeds	Failed due to other reasons
National	84.5	9.1	2.1	2.3	2.0
95% confidence interval	86.86–81.75	11.22–7.16	3.29–1.22	3.55–1.38	3.20–1.16

Appendix C. Continued.

Question 5. Have you hayed or grazed your CRP lands under emergency provisions?

Answer	National	95% confidence interval
No	85.1	87.12-82.77
Yes	14.9	17.18-12.83

Question 6: To your knowledge, what types of management, use, or disturbance have taken place on all, or part, of your CRP acres?

a. Spot treatment of weeds by mowing

Answer	National	95% confidence interval
No	37.8	40.70-34.82
Yes	62.2	65.13-59.25

b. Spot treatment by herbicides

Answer	National	95% confidence interval
No	65.3	68.15-62.38
Yes	34.7	37.58-31.80

c. Use of pesticides for insect control

Answer	National	95% confidence interval
No	99.0	99.48-98.18
Yes	1.0	1.77-0.49

d. Grazing, authorized under emergency use

Answer	National	95% confidence interval
No	94.8	96.00-93.23
Yes	5.2	6.71-3.96

Question 6. Continued.

e. Grazing, accidental

Answer	National	95% confidence interval
No	98.0	99.0-97.0
Yes	2.0	32.0-1.2

f. Haying authorized under emergency use

Answer	National	95% confidence interval
No	89.5	91.22-87.46
Yes	10.5	12.50-8.74

g. Burning, intentional

Answer	National	95% confidence interval
No	87.1	89.03-84.93
Yes	12.9	15.02-10.93

h. Burning, accidental

Answer	National	95% confidence interval
No	96.8	97.72-95.51
Yes	3.2	4.44-2.24

i. Fertilization

Answer	National	95% confidence interval
No	93.6	94.98-91.97
Yes	6.4	7.98-4.98

j. Additional seeding

Answer	National	95% confidence interval
No	83.6	85.74-81.22
Yes	16.4	18.73-14.22

Appendix C. Continued.

Question 6 (concluded).

k. Establishment of firebreaks

Answer	National	95% confidence interval
No	90.4	92.10–88.5
Yes	9.6	11.50–7.9

l. Flooding

Answer	National	95% confidence interval
No	94.4	95.68–92.84
Yes	5.6	7.11–4.28

m. Thinning of pine, hardwood trees, or shrubs planted as part of the program

Answer	National	95% confidence interval
No	97.1	97.96–95.84
Yes	2.9	4.1–2.0

n. Thinning of volunteer pine, hardwood trees, or shrubs

Answer	National	95% confidence interval
No	96.4	97.4–95.5
Yes	3.6	4.9–2.6

o. Other

Answer	National	95% confidence interval
No	95.1	96.25–93.56
Yes	4.9	6.39–3.71

p. None, there has been no known disturbance or use of the CRP acres

Answer	National	95% confidence interval
No	87.9	89.76–85.77
Yes	12.1	14.18–10.2

Question 7. What are the benefits of the CRP acres on your farm or community, observed by you or your family?

a. Improved control of soil erosion

Answer	National	95% confidence interval
No	14.6	16.84–12.54
Yes	85.4	87.42–83.12

b. Improved air quality

Answer	National	95% confidence interval
No	70.8	73.52–68.01
Yes	29.2	31.94–26.44

c. Improved water quality

Answer	National	95% confidence interval
No	61.2	64.05–58.15
Yes	38.8	41.80–35.91

d. Increased permanence of surface water

Answer	National	95% confidence interval
No	76.3	78.75–73.59
Yes	23.7	26.37–21.21

e. Improved control of drifting snow

Answer	National	95% confidence interval
No	69.5	72.21–66.63
Yes	30.5	33.33–27.75

f. Positive changes in wildlife populations

Answer	National	95% confidence interval
No	26.8	29.55–24.18
Yes	73.2	75.78–70.41

Appendix C. Continued.

Question 7 (continued).

g. Increased opportunities to personally hunt

Answer	National	95% confidence interval
No	62.4	65.43–59.17
Yes	37.6	40.70–34.45

h. Increased opportunities to lease land for hunting

Answer	National	95% confidence interval
No	88.1	89.94–85.99
Yes	11.9	13.96–10.02

i. Increased opportunities to observe wildlife

Answer	National	95% confidence interval
No	40.6	43.53–37.59
Yes	59.4	62.37–56.42

j. Improved scenic quality of farm or landscape

Answer	National	95% confidence interval
No	62.6	65.45–59.59
Yes	37.4	40.36–34.50

*k. Potential increase in future income
(e.g., sale of timber)*

Answer	National	95% confidence interval
No	83.3	85.41–80.86
Yes	16.7	19.09–14.55

l. Other

Answer	National	95% confidence interval
No	91.7	93.21–89.83
Yes	8.3	10.13–6.75

Question 7 (concluded).

m. No positive effects

Answer	National	95% confidence interval
No	98.9	99.43–98.09
Yes	1.1	1.85–0.53

Question 8. What are the negative effects of the CRP
acres to your farm or community, observed by your
or other members of your family?*a. Too much cropland taken out of production*

Answer	National	95% confidence interval
No	95.9	96.96–94.47
Yes	4.1	5.48–3.00

b. Negative effects on local economy

Answer	National	95% confidence interval
No	92.2	93.70–90.38
Yes	7.8	9.58–6.26

c. Attracts unwanted wildlife

Answer	National	95% confidence interval
No	91.3	92.91–89.43
Yes	8.7	10.52–7.05

d. Attracts unwanted requests for permission to hunt

Answer	National	95% confidence interval
No	82.0	84.21–79.50
Yes	18.0	20.45–15.75

e. Source of weeds

Answer	National	95% confidence interval
No	71.2	73.86–68.33
Yes	28.8	31.62–26.09

Appendix C. Continued.

Question 8 (concluded).

f. Potential fire hazard

Answer	National	95% confidence interval
No	80.7	82.97-78.14
Yes	19.3	21.82-16.98

g. Makes farm appear to be unkempt or poorly managed

Answer	National	95% confidence interval
No	86.9	88.84-84.69
Yes	13.1	15.26-11.12

h. Other

Answer	National	95% confidence interval
No	94.6	95.89-93.09
Yes	5.4	6.86-4.07

i. No negative effects

Answer	National	95% confidence interval
No	74.6	77.15-71.83
Yes	25.4	28.12-22.80

Question 9. Please give your evaluation of the amount of attention given to wildlife habitat in CRP enrollment requirements.

Amount of attention	National	95% confidence interval
Not enough	15.7	18.10-13.37
Appropriate	73.2	75.99-70.25
Too much	11.1	13.28-9.17

Question 10. Was the amount of assistance you received from the Farm Service Agency/Natural Resources Conservation Service to plan, maintain, or improve CRP acres for wildlife habitat...

Amount of attention	National	95% confidence interval
Not enough	15.7	18.17-13.44
Appropriate	82.2	84.55-79.57
Too much	2.1	3.17-1.26

Question 11. How well have you been informed by the Farm Service Agency/Natural Resource Conservation Service during enrollment or contract renewal about why specific types of cover practices are encouraged?

How well informed	National	95% confidence interval
Not at all informed	7.3	9.09-5.68
Somewhat informed	37.9	41.06-34.76
Well informed	54.8	58.01-51.55

Question 12. In some situations, to have a field renewed in the CRP, the USDA requires that part of the field have clover/alfalfa interseeded into existing grasses or that native grasses be planted to replace existing grasses. This is most often done to increase the fields' value as wildlife habitat. Which of the following answers best describe your feelings about these requirements?

a. CRP benefits to wildlife are important

Answer	National	95% confidence interval
Strongly agree	31.8	35.05-28.54
Agree	43.6	47.01-40.08
Neutral	15.4	18.04-12.97
Disagree	6.3	8.14-4.70
Strongly disagree	3.0	4.32-1.90

Appendix C. Continued.

Question 12 (concluded).

b. USDA requirements to enhance CRP covers to maintain long-term benefits to wildlife are reasonable

Answer	National	95% confidence interval
Strongly agree	15.3	17.96–12.88
Agree	46.5	49.98–42.97
Neutral	22.1	25.11–19.26
Disagree	11.7	14.06–9.52
Strongly disagree	4.4	5.98–3.06

c. If CRP covers are well established there should be no requirements to disturb or enhance them to renew acres in the program

Answer	National	95% confidence interval
Strongly agree	45.1	48.59–41.61
Agree	36.8	40.21–33.43
Neutral	13.6	16.15–11.31
Disagree	3.4	4.87–2.26
Strongly disagree	1.0	1.92–0.43

Question 13. If periodic management of CRP grassland acres were encouraged to maintain desirable characteristics of vegetation, which method(s) would be most suitable to your operation?

a. Mowing

Answer	National	95% confidence interval
No	42.3	45.42–38.98
Yes	57.7	60.89–54.45

b. Shredding/brushhogging

Answer	National	95% confidence interval
No	64.6	67.47–61.63
Yes	35.4	38.33–32.49

Question 13 (continued).

c. Grazing

Answer	National	95% confidence interval
No	79.1	81.50–76.52
Yes	20.9	23.43–18.46

d. Burning

Answer	National	95% confidence interval
No	75.3	77.82–72.54
Yes	24.7	27.42–22.14

e. Disking/plowing

Answer	National	95% confidence interval
No	91.7	93.23–89.81
Yes	8.3	10.14–6.73

f. Herbicides

Answer	National	95% confidence interval
No	74.5	77.05–71.71
Yes	25.5	28.24–22.91

g. Other

Answer	National	95% confidence interval
No	94.6	95.82–93.00
Yes	5.4	6.95–4.14

h. Periodic management of CRP acres is not desirable because I oppose disturbance of CRP grassland fields

Answer	National	95% confidence interval
No	66.0	68.86–63.08
Yes	34.0	36.87–31.10

Appendix C. Concluded.

Question 13 (concluded).

i. I do not have equipment

Answer	National	95% confidence interval
No	85.5	87.58–83.27
Yes	14.5	16.68–12.38

j. I do not desire to manage the field

Answer	National	95% confidence interval
No	95.8	96.90–94.40
Yes	4.2	5.55–3.06

k. Other reasons

Answer	National	95% confidence interval
No	90.2	91.87–88.20
Yes	9.8	11.75–8.09

Question 14. In relation to periodic management of CRP land, which of these choices are most appealing to you?

Choices	National	95% confidence interval
No change	49.1	52.52–45.64
Periodic haying/ grazing	7.3	9.22–5.61
Limited haying/ grazing	11.5	13.85–9.43
Increased manage- ment practices with rental payments	32.1	35.31–28.89

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13. ABSTRACT (Maximum 200 words) A National survey of Conservation Reserve Program (CRP) contractees was completed to obtain information about environmental and social effects of the program. Response rate was 64.5% (n = 2,189). Retired farmers represented the largest category of respondents (52%). Enhanced control of soil erosion was the leading benefit of the CRP reported. Over 73% of respondents observed increased numbers of wildlife associated with lands enrolled in the program. The majority of respondents reported CRP benefits including increased quality of surface and ground waters, improved air quality, control of drifting snow, and elevated opportunities to hunt or simply observe wildlife. Income stability, improved scenic quality of farms and landscapes, and potential increases in property values and future incomes also were seen as program benefits. Negative aspects were reported by a smaller number of respondents. Over 75% of respondents believed CRP benefits to wildlife were important. A majority of respondents (82%) believed the amount of assistance furnished by USDA related to planning and maintaining wildlife habitat associated with CRP lands was appropriate.				
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